GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

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

Gulf Council Office Tampa, Florida

July 30-31, 2019

STANDING SSC VOTING MEMBERS
Joseph Powers
Lee Anderson
Luiz Barbieri
Harry Blanchet
David Chagaris
Benny Gallaway
Robert Gill
Douglas Gregory
Jeff Isley
Walter Keithly
Robert Leaf
Kai Lorenzen
Campo Matens
James Nance
William Patterson
Kenneth Roberts
Steven Scyphers
Jim Tolan

SPECIAL MACKEREL SSC VOTING MEMBERS
Jason Adriance
Kari MacLauchlin Buck
John Mareska

SPECIAL REEF FISH SSC VOTING MEMBERS
Jason Adriance
Judson Curtis
John Mareska

SOCIOECONOMIC SSC VOTING MEMBERS
Kari MacLauchlin Buck
Jack Isaacs
Andrew Ropicki

STAFF
Matt Freeman...............................Economist
John Froeschke............................Deputy Director
Lisa Hollensead..........................Fishery Biologist
<table>
<thead>
<tr>
<th>Name</th>
<th>Title</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mara Levy</td>
<td>NOAA General Counsel</td>
<td></td>
</tr>
<tr>
<td>Jessica Matos</td>
<td>Administrative Assistant</td>
<td></td>
</tr>
<tr>
<td>Natasha Mendez-Ferrer</td>
<td>Fishery Biologist</td>
<td></td>
</tr>
<tr>
<td>Ryan Rindone</td>
<td>Fishery Biologist &amp; SEDAR Liaison</td>
<td></td>
</tr>
<tr>
<td>Charlotte Schiaffo</td>
<td>Administrative &amp; Human Resources Assistant</td>
<td></td>
</tr>
<tr>
<td>Carrie Simmons</td>
<td>Executive Director</td>
<td></td>
</tr>
<tr>
<td><strong>OTHER PARTICIPANTS</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Steven Atran</td>
<td></td>
<td>FL</td>
</tr>
<tr>
<td>Catherine Bruger</td>
<td>Ocean Conservancy</td>
<td>SEFSC</td>
</tr>
<tr>
<td>Shannon Cass-Calay</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Richard Cody</td>
<td></td>
<td>NOAA</td>
</tr>
<tr>
<td>Roy Crabtree</td>
<td>NMFS</td>
<td></td>
</tr>
<tr>
<td>Alisha DiLeone</td>
<td>NMFS</td>
<td></td>
</tr>
<tr>
<td>Michael Drexler</td>
<td>Ocean Conservancy</td>
<td>FL</td>
</tr>
<tr>
<td>Lauren Gentry</td>
<td>FWC</td>
<td></td>
</tr>
<tr>
<td>Karen Greene</td>
<td>NMFS</td>
<td></td>
</tr>
<tr>
<td>Peter Hood</td>
<td>NMFS</td>
<td></td>
</tr>
<tr>
<td>Mike Larkin</td>
<td>NMFS</td>
<td></td>
</tr>
<tr>
<td>Rich Malinowski</td>
<td>NMFS</td>
<td></td>
</tr>
<tr>
<td>Rick Methot</td>
<td>NMFS</td>
<td></td>
</tr>
<tr>
<td>Paul Mickle</td>
<td>GMFMC, MS</td>
<td></td>
</tr>
<tr>
<td>Jeff Pulver</td>
<td>NMFS</td>
<td></td>
</tr>
<tr>
<td>Matthew Smith</td>
<td>NOAA</td>
<td></td>
</tr>
<tr>
<td></td>
<td>- - -</td>
<td></td>
</tr>
</tbody>
</table>
# Table of Contents

Table of Contents..................................................................................2

Table of Motions.....................................................................................3

Introductions and Adoption of Agenda.................................................6

Scope of Work.........................................................................................9

Approval of SSC Minutes......................................................................9

Selection of SSC Representative at August Council Meeting.............9

Presentations.........................................................................................10
  Best Scientific Information Available..................................................10
  National Standard 1 Guidance on Estimation of Fishing
    Mortality and Biomass Proxies.......................................................18
  Coping with Information Gaps in Stock Productivity for
    Rebuilding and Achieving Maximum Sustainable Yield for
    Grouper-Snapper Fisheries.............................................................30
  Establishing Stock Status Determination Criteria for
    Fisheries with High Discards and Uncertain Recruitment...42
  A Perspective on Steepness, Reference Points, and Stock
    Assessment......................................................................................54

Review of Status Determination Criteria Amendment: Revised
  Actions.................................................................................................65

Discussion of Alternative ABC Control Rule.................................127

Review MRIP and State Survey Data Collection and Calibration
  Efforts................................................................................................153

Discussion of SEDAR 62: Gray Triggerfish Progress.......................162

Discussion of Council Research and Monitoring Priorities for
  2020-2024..........................................................................................163

Scope of Work: Gray Snapper Operational Assessment.................181

Scope of Work: West Florida Shelf Hogfish Benchmark Assessment...197

Discussion of the Gulf SEDAR Assessment Schedule.......................199

Explosive Removal of Structures: Fisheries Impact Assessment....202

Discussion of Almaco Jack Life History and Landings.................221
Other Business......................................................233
Adjournment......................................................236

- - -
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.

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

INTRODUCTIONS AND ADOPTION OF AGENDA

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

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

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

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

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

This webinar is open to the public and is being streamed live and recorded. Summary minutes of the meeting will also be made available to the public. For purposes of voice identification, each member is requested to identify him or herself, starting on my left.
DR. KAI LORENZEN: Kai Lorenzen, Standing SSC.

MR. RYAN RINDONE: Ryan Rindone, Gulf Council staff.

DR. JAMES NANCE: Jim Nance, Standing SSC.

MR. CAMPO MATENS: Camp Matens, Standing SSC.

DR. BENNY GALLAWAY: Benny Gallaway, Standing SSC.

DR. JEFF ISLEY: Jeff Isley, Standing SSC.

MR. DOUGLAS GREGORY: Doug Gregory, Standing SSC.

DR. ROBERT LEAF: Robert Leaf, Standing SSC.

MR. JOHN MARESKA: John Mareska, Reef Fish SSC.

DR. STEVEN SCYPHERS: Steven Scyphers, Standing SSC.

DR. DAVID CHAGARIS: David Chagaris, Standing SSC.

DR. JUDSON CURTIS: Jud Curtis, Reef Fish SSC.

DR. JACK ISAACS: Jack Isaacs, Socioeconomic SSC.

DR. WALTER KEITHLY: Walter Keithly, Standing SSC.

DR. KENNETH ROBERTS: Ken Roberts, Standing SSC.

DR. LEE ANDERSON: Lee Anderson, Standing SSC.

DR. WILLIAM PATTERSON: Will Patterson, SSC.

DR. LUIZ BARBIERI: Luiz Barbieri, Standing SSC.

MR. ROBERT GILL: Bob Gill, Standing SSC.

DR. JIM TOLAN: Jim Tolan, Standing SSC.

DR. ANDREW ROICKI: Andrew Ropicki, Socioeconomic Panel.

DR. KARI MACLAUCHLIN-BUCK: Kari Buck, Mackerel and Socioeconomic.

DR. RICK METHOT: Rick Methot, NOAA Senior Scientist for Stock Assessments.
DR. SHANNON CALAY: Shannon Calay, Southeast Fisheries Science Center.


CHAIRMAN POWERS: In the back, you might as well introduce yourselves as well.

MR. PETER HOOD: Peter Hood, NOAA Fisheries.

DR. JOHN FROESCHKE: John Froeschke, Gulf Council staff.

DR. MIKE LARKIN: Mike Larkin, NOAA Fisheries.

DR. ROY CRABTREE: Roy Crabtree, NOAA Fisheries.

DR. MATT FREEMAN: Matt Freeman, council staff.

DR. NATASHA MENDEZ-FERRER: Natasha Mendez-Ferrer, council staff.

MS. LAUREN GENTRY: Lauren Gentry, FWC.

MR. STEVEN ATRAN: Steven Atran, council staff, retired.

MR. JEFF PULVER: Jeff Pulver, NOAA Fisheries.

MS. ALISHA DILEONE: Alisha DiLeone, NOAA Fisheries.

DR. LISA HOLLENSEAD: Lisa Hollensead, council staff.

MS. KAREN GREENE: Karen Greene, NOAA Fisheries.

MS. MARA LEVY: Mara Levy, NOAA Office of General Counsel.

CHAIRMAN POWERS: All right. Thank you. A couple of business items. There is a sign-in sheet that’s being passed around, and it started in that direction, and so make sure that you fill it out, particularly if you’re a member of one of the SSCs. Also, today and tomorrow’s session will have a working lunch, and we’re bringing in lunch, and it’s paid for by the panel members, who will not have an opportunity to leave the meeting to procure food for themselves elsewhere. When lunch is served, please allow the panel members ample opportunity to obtain their meal. After that, others can help themselves, and there is a café in the high-rise next door, and so that’s sort of standard.

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

DR. BARBIERI: So moved.

CHAIRMAN POWERS: Do we have a second?

MR. GILL: Second.

SCOPE OF WORK

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

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

APPROVAL OF SSC MINUTES

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

MR. GILL: Move approval.

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

CHAIRMAN POWERS: Is there a second? We have a second. Are
there any objections? If not, then we will proceed with that.
The next thing is the Selection of SSC Representative for the
Council Meeting in a couple of weeks in New Orleans. Luiz has
volunteered, and, if there is nobody else that wants to do it,
or I want to give people the opportunity to kind of get into this sort of activity, if you’re interested. If there are no objections, then we’ll go ahead with Luiz, but I would encourage people to come to me and talk to me if you are interested in this kind of thing, to give other people the opportunity. Thank you.

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

PRESENTATIONS
BEST SCIENTIFIC INFORMATION AVAILABLE - NOAA POLICY DIRECTIVE
FOR STOCK STATUS DETERMINATIONS AND CATCH SPECIFICATIONS

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

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

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

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

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

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

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

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

The second step is the peer review process itself, and the
National Standard 2 compliant peer review processes have all
been documented around the country, and your SEDAR process is
certainly among those and one that provides a very complete review of it.

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

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

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

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

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

We see that an assessment may well accomplish, or even attempt, only one of these four, or it may attempt all four of these, but to treat them separately and to recognize that coming to a conclusion on each of them independently is a wise move, because it allows us to accept the good and, for things that are not yet
ready for use, those can be put aside, and you can get back to
them in a subsequent round.

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

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

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

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

As we go through this communication process to arrive at a
common understanding of the assessment, one of the things that
we believe will be helpful is something that already occurs to
varying degrees in each of our regions, but we believe that some
of the gaps in communication that have occurred in the past
could have been alleviated if it was clear that the SSC should be prepared to reach out to NMFS if you have a question.

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

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

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

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

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

We understand that the SSCs are in need of looking at a range of alternatives as you develop your catch recommendations, your ABCs, and providing advice to the councils on buffers going into ACLs, and that’s your role in this process, and the information
you may need to look at subsequent to completion of the assessment, and we recognize that that happens, but we’re, again, reiterating what’s in the National Standard 2 Guidelines already.

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

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

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

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

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

**CHAIRMAN POWERS:** Thank you, Rick. One of the things that was
presented here, which I think is really important, because we
kind of got ourselves into a trap, is these four items of what
it is we’re trying to make recommendations about, the four items
being is it overfished, is it overfishing, are the projections
okay, and general status determination criteria themselves, MSY
and those sorts of things.

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

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

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

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

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

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

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

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

**CHAIRMAN POWERS:** Any other questions or comments? If not, thank you, Rick. Before we move on to the next presentation by Rick, I forgot that there are people on the webinar that I didn’t give the opportunity to introduce, and I think Jason Adriance is on the webinar. Charlotte, is there anybody else?
MS. CHARLOTTE SCHIAFFO: Nobody else from the SSC. It’s just Jason.

MR. JASON ADRIANCE: Jason Adriance, Reef Fish SSC.

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

NATIONAL STANDARD 1 GUIDANCE ON ESTIMATION OF FISHING MORTALITY AND BIOMASS PROXIES

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

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

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

We have divided this work into three sub-groups, and the first sub-group is on reference points themselves, and I am chairing that sub-group. The second sub-group is focusing on ABCs, and one of the provisions for carrying over, or phasing in, ABC changes from one year to the next, and the third sub-group is on approaches for more flexibility in the approach that we use for data-limited stocks.
Let me take them in sort of reverse order here. The Sub-Group 3 is on data-limited stocks, and it’s chaired by Jim Berkson, who has been working on this topic for a number of years, and we have a couple of staff liaisons from the various councils.

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

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

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

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

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

If things are highly uncertain from one assessment to the next, phasing-in may or may not make the best sense, and so the tech memo that they’ve been working on, and, again, it’s well along, and it’s in the review process now, is something that we think will provide some guidance on how to go about implementing the provisions.
Essentially, it’s always been possible to craft an FMP control rule that would have some phase-in or carryover provisions, but it was laid out more explicitly in the most recent round of the National Standard 1 Guidelines, and so now providing technical guidance for doing that is something that we have taken on. The plan right now is to be able to present this to the CCC at its November call.

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

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

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

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

Finally, the whole process of how do we go about estimating FMSY and BMSY and the various proxies — The two talks that are going to follow mine certainly are talking about this topic very directly, and it’s very good work, and I’m very glad to see the good work happening in this region on this topic and the things
that you’re going to have here later today.

One of the things that we’re looking to do, again, is to summarize the FMSY and BMSY approaches that are out there. Most stocks in the country have an FMSY based upon some proxy. Typically, that proxy is expressed in terms of spawner potential ratio, which is the fish spawning biomass per recruit divided by the unfished spawning biomass per recruit, and the selected SPR proxies range pretty broadly, from F20 percent to F50 percent being the range that we see in the various FMPs and stocks around the country.

This graphic lays out some of that diversity. A large number are using F30 percent, but there is also a number at F45 and F50, and there are some that are estimated directly, and most of these are from data-moderate stocks that have biomass dynamics models being applied, and I will get into this differentiation.

We have a diversity of approaches that have been taken around the country in order to articulate what is the proxy to be used when you cannot directly estimate the FMSY from your science about the stock dynamics.

Similarly, on BMSY, and, again, there is a range of approaches, from as low as 20 to 26 percent, up to 40 or 50 percent as the expected BMSY levels, and so, again, this range raises some questions about are we as consistent in invoking a basis for our determinations as we could be and can we take advantage of the work that’s gone on over the last thirty years on this type of a topic to come to a better consensus on what is a good approach when we can’t confidently calculate it directly.

With regard to the topic of status determinations from having an SPR measure, and this comes up today in the data-limited world, where we have essentially equilibrium-based assessments. We have a snapshot of the size structure of the stock today, or maybe the age structure, and we have something that gives us a sense of whether or not the stock today is experiencing too much fishing or not.

The question that arises is, well, if we’re taking essentially an equilibrium-based approach to coming to that determination, and we come to a determination that it looks like overfishing is occurring, essentially we’re coming to the same determination that overfishing has been going on for sufficiently long for it to show up in this picture of the stock today.

The question then is can we also use that as a way to make an
overfished determination or not, and, in the past, we have shied away from making such overfished determinations on the basis of assessments like that, but there’s been a lot of work and a lot of thinking about how we can deal with data-limited stocks, and so we’re looking to revisit this question of whether or not it’s a good approach.

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

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

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

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

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

That is really, I think, the main point there, is can we find
ways to move back to basically a lower-tiered approach to
answering the question of is there overfishing or not.

Let me spend a little bit more time now on the topic of
reference points, and one of the big issues that has really
captivated our working group, and we have been meeting by
conference call every couple of months, and we end up stumbling
on this kind of a question all too often, and the dichotomy is
this. It’s that, when we take basically a data-moderate
approach to an assessment by using a biomass dynamics sort of
model, it’s all so easy.

In the end, you have an MSY and an FMSY that just fall in your
lap at the end of doing this assessment, and it’s hard to tell.
You get very few diagnostics out of such an approach, but you
get an answer, whereas, in the age-structured world, we can ask
all kinds of questions, and we do, and we get wrapped around the
axe all too easily with a number of detailed questions of
things that we can easily demonstrate matter. There are 10 or
20 percent changes in what the advice would be as we look at
various factors.

What we’re trying to do is find a way to use this richness of
the science that we can get into in the age-structured world,
yet still come up with advice that is as easy to articulate as
the biomass dynamics kind of advice, and we’re looking to have
it both ways, if we can, and we’re working on that.

I mean, I can’t say that we have a clear path yet as to how we
get there, but we recognize that as sort of a fundamental
challenge to what we’re doing, and the talks that we’re going to
hear after mine will certainly illustrate very well, I think,
the kind of thinking that’s going into the science today.

I am not certain why I included this slide, but this is just
demonstrating the degree to which things matter. This is just a
slide that shows that, as you think about the spawner-recruit
relationship that’s included within the age-structured
approaches, the parameter that controls the productivity of the
stock, what we call the steepness of the spawner-recruit
relationship, it matters a lot. It’s a two-parameter curve, and
so changing one parameter changes the shape of the curve and
changes where various things happen along that curve.

The figure on the right-hand side simply shows that this
steepness level ranging from a minimum of 0.2 up to 1.0 matters quite a bit on where BMSY will end up being calculated to be relative to B zero. If you expand your approach, expand your thinking, to a more flexible curve that has three parameters, then this whole thing fuzzes out, and you don’t have this fixed relationship anymore.

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

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

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

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

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

I have already mentioned the spatial issues, and the other big challenge that gets into the productivity estimation is in regime shifts, or even more challenging is, essentially, the potential for long-term drift in the productivity of stocks as ecosystems change over decades or centuries.
As they change, and don’t do it abruptly, will we be able to have sufficiently flexible approaches to status determinations that can work on providing guidance, even in these changing circumstances?

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

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

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

Gradually, we have seen more measures of this showing up in the assessments and then just being used in the status determinations. The challenge is that the work on determining what are good proxies for FMSY, that work was largely done in the 1990s, and it was all done sort of conditioned on mature biomass being the measure of reproductive potential, and, when you do the math, you end up needing to recalibrate those proxies a bit as you transition to measuring reproductive output in terms of ovary weight or in terms of fecundity measurements, because the older animals make a proportionally greater contribution, and so they are proportionally more impacted by fishing, and that ends up requiring some degree of recalibration.
It's certainly something that could be done, and identifying and summarizing the work that's already been doing this is one of the things that we're working on.

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

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

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

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

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

DR. ROBERTS: Thank you, Mr. Chairman. This is out of my area, but I’m going to ask it anyway. Looking at your second-to-last slide, the considering the state of science, one of the things that has puzzled me is that I think most assessments are getting
kind of mature. We have more and more years in the time series, and that, to me, as an economist, is telling me that the fishing effort, the effectiveness of fishing effort, over a longer time period can’t be treated uniformly as a constant, and I’m wondering if anybody is working on trying to identify what role the changing of fishing effort impacts over time has on the assessment.

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

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

DR. ROBERTS: Thank you.

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

A pretty good yield, where you may, over a wide range of biomass, you may get a 5 percent change in yield, but it might mean something like 10 or 20 percent change in F, and that relates to things like participation, allocation, and it relates to employment sorts of things, and so, in my mind, you have to think of it in both areas, because, from a management perspective, those sorts of things are going to become important, and so that’s kind of the tradeoff that you have to
think about. The second thing is -- Did you want to comment on
that?

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

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

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

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

DR. BARBIERI: I actually thought about one point, Rick. If you
go to Slide 8 or 9, thinking about us discussing reference
points, and here you’re talking about, in Slide 8, FMSY, and I’m
thinking about the range there that we see on that graph and
trying to think about us defining MFMT now as risk neutral
versus some of these choices here, and so how much do you think
there is embedded here so accounting of risk by precaution in
the choices of these values? Like how much have they been
decided here based on something like this?
I am thinking more about more recently, where you actually look at OFL and those reference points that are produced, especially the exploitation one that comes out of the assessment as risk neutral, and then we move on to catch advice that integrates scientific uncertainty and then risk. Can you comment a little bit on that, please?

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

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

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

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

**MR. GREGORY:** Luiz’s questions make me look at this and think about it, and I don’t really know what’s going on, but I would hazard a guess that the 45 and 50 percent mostly are from the Pacific Council, where they have rockfish that live to be over
100 years old, and the 40 percent is mostly New England and the
Mid-Atlantic, and maybe that’s them trying to rebuild the
groundfish fishery. I don’t know, and I’m just speculating, but
it’s a great question to see what was the motive behind each of
these from the different councils, and it would be interesting.

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

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

**DR. METHOT:** Yes, I’ll be around.

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

### COPING WITH INFORMATION GAPS IN STOCK PRODUCTIVITY FOR
REBUILDING AND ACHIEVING MAXIMUM SUSTAINABLE YIELD FOR GROUPER-
SNAPPER FISHERIES

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

We start with this slide that shows the shape of a spawner-
recruit relationship on the left under two different values of
steepness, understanding that the steepness parameter has an
important effect on the shape of that relationship, and Rick
talked a little bit about this in his presentation, but what I
also wanted to introduce is, on the right, the plot on the
right, I have reproduced the same stock, in terms of steepness, but now plotted SPR on the X-axis, and that’s spawning potential ratio, and the equilibrium catch on the Y.

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

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

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

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

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

If we use that information to evaluate the performance of different proxies across these states of nature, across these
steepness values, the expectation is that we can provide some
decision support for proxy selection based on a probabilistic
approach, and that's the method, in a nutshell, and I will come
back to methods momentarily.

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

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

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

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

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

We can then summarize the performance outcomes with respect to
the steepness value assumed for the stock, but there is
something lacking about that, because, as you understand, the
performance is going to be conditional on steepness, but it is
uncertainty in steepness that brought us to this point of asking
how do we come up with proxies, and so, instead of having
outcomes that are contingent on steepness, we use a steepness prior and produce marginal outcomes without reference to any particular state of nature, and so that means that the results are no longer conditional on any particular steepness value, but they reflect instead our degree of belief in steepness, and that degree of belief is defined according to the prior probability distribution, and this prior in the bottom right of your screen came from work by Shertzer and Conn in 2012, and it was a meta-analysis used to identify steepness prior for demersal fish stocks.

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

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

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

DR. PATTERSON: Yes. Thanks.

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

You are implicitly saying that you are certain about steepness, and, in this case, we assumed that steepness was at 0.8, and so what does that mean? Well, if you have a look at the -- In the first row, if you look at the plot, where we have biomass as a fraction of BMSY, and we interpret these plots in the way we want to identify the FSPR proxy with the greatest probability mass centered at BMSY, and what does that mean?
Have a look at the labels on the B over BMSY plot and find the bin that’s labeled “0.8 to 1.2”. This is the bin that encompasses BMSY, and, each line on the plot, you can think of it as a probability distribution, or you could think of it a big like a histogram. If you identify the orange line on the plot, you will see that it’s approximately centered over that bin of 0.8 to 1.2, and that orange line corresponds to the proxy of F30 percent SPR.

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

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

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

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

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

These are the results for the hermaphroditic stocks. It’s the same interpretation, and the take-away here is that, under the informative prior, that F50 percent SPR has the greatest probability mass centered around long-term achievement of MSY.
This brings us to the principal conclusion of this paper, and
that is that, given an informative prior and steepness, F40
percent SPR is most consistent with MSY reference points for the
gonochoristic stocks, the snapper stocks, snapper and some other
species, and, on the other side, F50 percent SPR is most
consistent with the MSY-based reference points for
hermaphroditic stocks.

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

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

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

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

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

Similarly, we can plot the surplus production curve on the
right, and I put SPR on the X-axis and relative catch on the Y,
and you can certainly identify the SPR that is associated with
long-term achievement of MSY. Gag grouper is a protogynous
hermaphrodite. If we do a thought exercise that says what if
there were a species that was identical to gag grouper in every
conceivable way, except that its sex ratio was 50/50 throughout
its life span, instead of transitioning from female to male,
and, because this was a simulation exercise, I can flip that
switch and say, okay, and again, this is just a hypothetical.

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

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

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

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

What if the opposite was true? What if we were harvesting fish
prior to their maturation? Well, I think the advice here is one
of priorities and seeking adjustments to regulations regarding minimum size, notwithstanding, of course, that there can be market-driven considerations, but harvesting undersized fish is, of course, problematic. Immature fish is problematic, I should say, and so, if that’s a priority, then you could better align minimum harvest size with length at maturity.

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

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

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

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

**CHAIRMAN POWERS:** Yes, but, in terms of productivity, it makes a difference. I mean, you can do the assessment without knowing exactly what that relationship is, but I am wondering how that might affect productivity. Why do they change sex, basically, and that’s kind of been a debate that’s been going on for years, and so that’s something to think about, I think. Are there other questions that we should bring up here? Doug.
MR. GREGORY: Thank you, Bill. That was very good, and can this simulation be done on a species-by-species basis, because I noticed within the groupers, per se, there was a large variation, and we have black grouper that matures a lot larger than the size limit, and we have red grouper that matures much smaller than the size limit, or the selectivity, and they are combined in this, and we’ve got a red grouper assessment coming to us in September, and so, if you can do it on a species basis, that would be interesting for red grouper.

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

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

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

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

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

DR. HARFORD: That’s exactly correct, yes.

DR. MEBHOT: I would just add, and if you add uncertainty in the structural form of the -- This is all based upon Beverton-Holt. Once you fuzz that out a bit by bringing in a third parameter,
even that uncertainty gets broader.

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

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

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

DR. HARFORD: That’s correct, yes.

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

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

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

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

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

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

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

CHAIRMAN POWERS: Thank you. Doug.

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

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

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

DR. HARFORD: You still end up with a probability mass centered
close to 0.5, but I can tell you, as a rule of thumb, if you remove the species that are at the top of that plot, you start shifting towards F40 percent, and, conversely, if you remove the species that are at the bottom of that plot, you start shifting towards 50 and 60 percent, and so that’s how you can interpret that, but, overall, you still stay in the neighborhood of 50 percent with the groupers.

CHAIRMAN POWERS: Thank you. Yes, go ahead.

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

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

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

DR. CALAY: Thank you very much for recognizing me, and I realize that I’m not a member of the SSC, but I have a question for you, Bill, about your assumption regarding asymptotic selectivity. In many of our fleets in the Gulf of Mexico, there is certainly evidence of a dome-shaped selectivity pattern, and, in my thinking, I would imagine, if you put a dome-shaped selectivity pattern into your analysis, that the results could
support somewhat lower SPRs, and is that intuition correct, or am I mistaken?

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

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

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

(Whereupon, a brief recess was taken.)

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

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

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

Just a little bit of background, and then we’ll get into the nitty-gritty. Magnuson-Stevens requires that we rebuild the stocks to a biomass level that is consistently able to provide MSY. The little graphic there on the side is one from the paper, and the paper itself is a couple of years old now, and so this might have changed somewhat since then, but the take-home is, for the Gulf and Caribbean, you can see that we have about
half of our stocks that are SPR-based and the other half are
catch-based, and there are a few MSY-based and a couple of
others.

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

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

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

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

Again, this is critical for a species like red snapper in the
Gulf and several of our other fisheries, especially in the Gulf
of Mexico, where we have very complex fishing dynamics, with a
lot of discard and bycatch fleets.
Down at the very bottom, just to emphasize that point, and I know many of us are aware of these, but you can see that the fleets -- There are eight directed fleets on the left-hand side of those two graphs and six different bycatch and discard fleets that are actively removing stuff from the stock at varying levels of magnitude, in terms of their total contribution to mortality, and there are complex and messy fisheries in the Gulf of Mexico, in many cases.

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

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

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

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

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

The targets that we choose from SPR-based analyses can sometimes be arbitrary, and I think that’s something that this body and
other bodies have struggled with, is trying to find good
science-based directions for SPR-based proxies that aren’t just
sort of rolled into what would be 30 percent this time, or 40
percent this time, and we’re searching for an answer to get away
from that kind of arbitrary selection of these proxies.

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

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

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

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

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

Like I said before, there are eight directed fleets, four in
each of the east and west components of the Gulf of Mexico and
three discard fleets, for a total of six, with three each in
each of the east and west component of the Gulf of Mexico.
Selectivities for those fleets are shown there, and you can see
there is some consistency amongst sectors.

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

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

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

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

This one is very difficult to see, and this is the two other
steepness scenarios, the 0.85 scenario in the top-right and the
0.7 scenario in the bottom-right, and, really, the only thing to
take home from this is something that you would imagine would
happen anyway, is that, as those steepness values decline from a
maximum value of one, the SPRs that are sustainable with the
associated methods get larger and larger, which makes just
intuitive sense. This is the foundation for the prospect that
we can use this to set, potentially, bounds on what an
appropriate SPR for a stock would be, given varying levels of
steepness.

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

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

CHAIRMAN POWERS: Matt, for the sensitivity, how much did you
increase discard?

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

Is there a best proxy for MSY? Our conclusions from this was
no. Each one of them has their flaws. Without a stock-recruit
function, we can’t actually estimate MSY, and so that one is out
the door until we get a functioning stock-recruitment
relationship.
The MSY global, in terms of removals, is unobtainable, in practice. We clearly don’t have a knife-edge optimized fleet fishing in the Gulf of Mexico for red snapper. If we did, people probably wouldn’t complain about it, because they would get thirty-five million pounds of fish, but we don’t, and nobody does, at least not in the Gulf.

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

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

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

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

This is just sort of summary stuff coming up here, and, like I think I’ve said before, the SSB at MSY global is attainable, even though the associated yield is not. It’s inherently sustainable, and we believe it’s inherently sustainable, because it is the SSB derived from where birth rate equals death in an optimized fishing fleet will rebuild the biomass to levels that
provide for MSY, thus fulfilling the Magnuson-Stevens Act requirement.

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

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

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

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

When productivity is uncertain, which is the case for most of our stocks, SPR MSY global associated with that steepness value of one can provide a good lower bound on what an acceptable SPR value should be for the stock, and, for the specific case of red snapper, the current SPR of 26 percent lies within the bounds that came out of this analysis, which was 24 to 38 percent, and
so we believe that that value, as it stands right now, is a
perfectly plausible SPR proxy for red snapper.

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

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

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

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

DR. NANCE: Those don’t have the same bycatch issues, do they?

CHAIRMAN POWERS: Gray snapper doesn’t, but gray triggerfish
does. Thank you. Will.

DR. PATTERSON: For gray triggerfish and gray snapper, did you
also utilize that 0.7 to 1.0 range for the plausible SPRs, I
mean steepness. Excuse me.
DR. CALAY: For those species, we only did steepness close to one, to establish the lower bound.

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

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

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

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

CHAIRMAN POWERS: I think, to some extent, that is, or should be
anyway, addressed by the working group that Rick was talking about and integrating it across uncertainty, and it’s precisely that kind of thing, is that there is a perception, if you give somebody a range, that they’re all equally likely, and we have to be careful about that.

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

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

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

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

**CHAIRMAN POWERS:** What Benny is referring to is, if you have -- During the recruitment process, if you have density-dependent mortality going on, if it’s like a Beverton-Holt, and you can have different density-dependent mortalities over different stages, but it all kind of gets washed out, and you still have a Beverton-Holt stock-recruitment relationship at the end, over the whole time period.
However, if you have catches during that time period, it changes things considerably, and, in the case of the shrimp bycatch, where you're having catches in the zero and one age range, when you were considering that this was the recruitment process, it really does change things, and that’s an important issue.

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

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

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

DR. METHOT: The model is fine. It’s the users.

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

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

DR. FROESCHKE: Before we started rebuilding, those data are not informative?

CHAIRMAN POWERS: Apparently not. I mean, that’s essentially what you see there. Will.
DR. PATTERSON: Back to what Benny was talking about with the juvenile bycatch, it seems to me that it’s confounded here, because, the period where the stock size was lowest, we had much higher shrimping effort on the youngest age classes, and, now that -- As the stock recovers, we have changed that dynamic, and we don’t have as much effort on those earlier age classes, and so there is some process in there that we’re not fitting.

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

A PERSPECTIVE ON STEEPNESS, REFERENCE POINTS, AND STOCK ASSESSMENT

DR. MARC MANGEL: The first point is how we write the Beverton-Holt stock-recruitment relationship. The way Ray and Sidney wrote the relationship between recruits and total number of eggs is alpha E over beta plus E, and everything I’m going to tell you on that slide also applies to the Ricker, if that’s your preference. In this stock-recruitment relationship that Ray and Sidney wrote, alpha is the number of recruits as eggs become infinite. Now, that’s actually a hard thing to know what’s going on.

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

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

DR. METHOT: In the flesh.

DR. MANGEL: So you’ve heard this talk back in March, with minor modifications to date.

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

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

DR. MANGEL: Okay, and so we should be at Slide Number 6, which has a picture of Brian Rothschild’s book, the cover of Brian’s book. If we go to the next slide, the way Beverton and Holt wrote this relationship is alpha over beta is the maximum egg survival, which you can see as the number of eggs get smaller and smaller.

54
When Jon Brodziak and I started to think about steepness again about a dozen years ago, we wrote the relationship just slightly differently, and so, there, you should see another equation for recruitment as a function of total eggs, and now it’s alpha times E divided by one plus beta times E.

The reason for doing this will become really crystal clear as we go, but, right now, alpha is a measure of the maximum egg survival, and beta is the number of eggs giving half of that survival, and these are easier to measure and easier to compute.

Thing Number 2, and I may be repeating some stuff that came earlier today, but the maximum per egg survival depends on the early life history, and so, again, alpha is maximum egg survival, and, if we let \( S_{ER} \) of tau be the egg survival, and so tau of the egg to recruit interval -- I just got disconnected, maybe, and did anybody hear me about --

**DR. BARBIERI:** Yes, we can hear you, Marc.

**DR. MANGEL:** If we let \( \tau_{ER} \) denote the length of the egg to recruit interval --

**CHAIRMAN POWERS:** Marc, let me interrupt here. I think we’re having trouble aligning what you’re saying with what’s showing on the screen.

**DR. MANGEL:** Okay. I should be at Slide 16 now.

**CHAIRMAN POWERS:** I think, Marc, when you say, “next slide”, you should say if it’s like Thing 1 or Thing 2, because that’s --

**DR. MANGEL:** All right. Thing 2, and the slide I’m looking at has, after “Thing 2”, in red, it has four lines, the last line of which is alpha is equal to \( S_{ER} \) of \( \tau_{ER} \). In my presentation, it’s Slide 16. Are we there?

**CHAIRMAN POWERS:** Yes.

**DR. MANGEL:** Okay. Now, if we go to the next slide, it’s still Thing 2, and it should show a citation to Michael McGurk’s 1986 paper, which basically shows how to find that. Still Thing 2, the next slide, shows McGurk’s plot, which is dry weight across twelve orders of magnitude fit to the rate of natural mortality, and so that basically gives us size-dependent mortality during the egg to recruit phase.
Still Thing 2, the next slide, there is a differential equation
then that the rate of change of survival is minus the rate of
natural mortality times survival, and so this is -- Since
mortality is size dependent, we need some kind of growth model
within the egg to recruit phase, and so it should say, if the
egg to recruit interval growth is exponential, then the mass at
any time during that phase is the initial egg or larval mass
times \( E \) to some growth constant times where you are in that
phase.

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

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

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

Knowing these is sufficient if you have a mechanistic model for
steepness, and that’s what those two papers in 2010 and 2013 do,
and here’s the formula for steepness, and so you can think of
this as alpha -- You can compute from that egg to recruit
survival, and then everything is just standard demographic
information, and, if you look at this expression, that summation
from a equals zero to Amax of survival times length to the power
times probability of being mature times fecundity, that is
basically lifetime egg production of an individual, and so the
demographic information gives us steepness.

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

Here is a distribution for steepness for bluefin tuna that
appeared in our 2010 paper. Here is a distribution for
steepness that Jon and some colleagues did for striped marlin a
few years later. Here are two distributions for steepness for
blue shark published about two years ago, and the difference
between these is whether the Beverton-Holt or Ricker stock-
recruitment relationship is used, and I will just mention that
Kai has another paper that I recently reviewed, and, in addition
to using different stock-recruitment relationships, he uses a
different growth formula, because, if you look at the formula
for steepness, you see that L of a appears in that formula, and
so different growth relationships will also give you different
distributions for steepness.

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

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

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

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

Here is -- The production model that I’m going to use is the
following, and I am going to write N for the number of
individuals, and I am going to have it increase according to that same Beverton-Holt and then have a constant rate of natural mortality.

The number of eggs will then be the productivity times the number of individuals, and then, if I define alpha_\text{P} and beta_\text{P} to be alpha times phi and beta times phi, in Slide 55, I get to an equation that just involves N on both sides, and that dN and dt is alpha P over one minus beta P times M times N, and I will just point out that, if beta times --

(Part of Dr. Mangel’s comment is not audible on the recording.)

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

Let’s go to the next slide. This just solves for the steady state of this equation, which I am going to denote by N_0, and then the steady state is determined by the ratio of alpha over M, and so one, and one over beta, but notice how they separate, and so alpha over M is basically the maximum productivity that the stock can have divided by the rate of natural mortality, and so the only way you can have a positive steady state is if that ratio is bigger than one.

Beta is a measure of the strength of density dependence, and so that basically scales how high the steady state stock size is based on alpha P over M, and so, for example, with the California Current, one of the things that was true about the Sebastes stocks forty years ago, or fifty years ago, was that they had very, very high standing stocks, and nobody realized how low their productivity was, but you could just look at this formula and see that, if alpha is only slightly bigger than M, the thing in brackets is still bigger than zero, but, if beta is very small, you could have an enormous standing stock for a not very productive species.

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

Steepness is the ratio of productivity to M divided by four plus the ratio of productivity to M, and the four comes in there
because of the definition of steepness relying on 20 percent of spawning stock biomass, and this is has a very sweet interpretation, very simple.

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

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

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

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

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

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

(Part of Dr. Mangel’s comment is not audible on the recording.)

**MR. RINDONE:** Dr. Mangel, your audio feed is breaking up quite a bit. We’re having trouble understanding you.
DR. MANGEL: Okay, and so I am now on Slide 71. I am missing two or three slides from this presentation that show how well the -- If you go to the 2013 Canadian Journal paper, and I presume that’s available to everybody there, you can see some comparisons with the production model and the results of Robyn Forrest and her colleagues on using some complicated Bayesian hierarchical models.

(Part of Dr. Mangel’s comment is not audible on the recording.)

MR. RINDONE: Dr. Mangel, we’re having a hard time understanding you. Your audio feed keeps cutting in and out.

DR. MANGEL: There is nothing here that I’m having a problem. Did anybody hear what I said about the missing slides?

MR. RINDONE: Bits and pieces. To the SSC members, Dr. Mangel’s paper, the Canadian Journal paper, is on the website in all of the briefing materials.

DR. MANGEL: We can try to continue, I guess. Let’s go to the next slide, which is Thing Number 8, which is that setting steepness equal to one is actually about as non-conservative as you can get. These conclusions are based mainly on using the production model. If we go to Slide 73, it shows steepness again, and so steepness equal to one means alpha over M has to go to infinity. That means either the stock is infinitely productive or natural mortality is going to zero.

The next slide is FMSY over M as a function of steepness, and, if you look at the equation, you see that, as steepness goes to one, FMSY over M goes to infinity, and the notion is, of course, if you have a stock that is infinitely productive, you can fish it infinitely harder and still be sustainable.

The next slide is my firecracker. I am not missing slides. They are just out of order. Okay. Thing Number 9 is the production model predicts the results from age-structured ones very well.

The next slide, Slide 78, that’s the Robyn Forrest paper that I mentioned, and, if you go to Slide 79, what I am showing there is a plot of BMSY over B zero predicted by production by using the production model on the X-axis and BMSY over B zero from Forrest et al. It’s a complicated hierarchical Bayesian model on the Y-axis, and the line is the one-to-one line, and each dot is one species and their analysis.
If we go to the next slide, Slide 80, on the X-axis, I have shown steepness. On the Y-axis, I show SPR MSY, and the line is what comes out of the production model analysis, and the points are what comes from Forrest et al., and so the simple production model is capturing a lot of the properties of this very much more complicated model.

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

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

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

(Part of Dr. Mangel’s comment is not audible on the recording.)

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

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

Then I am almost done here, and let’s go to the next slide, which I call my bonus track, which is, if you don’t know what determines recruitment, for Beverton-Holt, the right prior for steepness is basically a uniform tied down at 0.2. Let’s think about why that is.
Let’s go to the next slide, which says how to be wrong, and then
Slide 89 is supposedly set H equal to one, because we say we
have no idea what determines recruitment. When we say H equals
one, we’re saying that --

(Part of Dr. Mangel’s comment is not audible on the recording.)

**DR. MANGE L**: R zero for recruitment when spawning biomass is 20
percent of unfished spawning biomass is equal to one. This
means we actually know a lot about the recruitment. We’re
saying recruitment at 20 percent of unfished biomass is unfished
recruitment.

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

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

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

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

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

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

Also, as the equation showed there, specifying alpha is the same
thing as specifying H, and there’s a strong -- What Marc has
shown here is there’s a strong relationship, or not a strong
relationship, but there is equivalence between picking one
parameter versus another parameter, and they are related, and so
you think -- If you start making too many assumptions, you’re
making assumptions that are incompatible with each other, if you
start specifying alpha and age or alpha and the M value, things
like that.

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

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

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

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

If some individuals actually get reproductively active before
recruitment to the fishery, then in fact there is some kind of
complicated interplay between the mortality and the alpha and
the survival in that lifetime egg production, and I haven’t
thought about that. I will try to get Nick Grunloh working on
it.
CHAIRMAN POWERS: Thank you. Are there any other questions or comments? If not, thank you, Marc, for your presentation.

DR. MANGEL: I am sorry that I couldn’t be there, and I apologize for the confusion about the order of the slides.

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

DR. MANGEL: I will take that as a compliment.

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

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

---

July 30, 2019

TUESDAY AFTERNOON SESSION

---

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

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

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

REVIEW OF STATUS DETERMINATION CRITERIA AMENDMENT: REVISED ACTIONS

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

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

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

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

We are hoping to take something, and we can get feedback from you all and the council, so we can kind of develop this document and hopefully run it over the finish line at some point in the not too distant future, but there is a -- On the website, I think it’s 7(a), and it’s sort of a history of the status of what we’ve kind of worked through this, and there are different
items, ecosystem-related things, and I won’t drag you through the weeds on that, but it is there.

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

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

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

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

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

Table 1.1.3, if you recall, this has a long history, dating back to the Generic ACL/AM Amendment, which you all labored over for a long time in 2011, and this primarily deals with the data-poor
species that we just don’t know a lot about, and so what we’ve
tried to do, or what was done in the past, is looking at a
series of life history information and landings and all kinds of
things.

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

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

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

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

Alternative 2 would essentially just codify those
recommendations for the F30 percent for those stocks that we’ve
already done and management action has been taken on those, and
so that would reflect what’s in Table 2.1.1.
Alternative 3 is a big block of words, and it’s identical to Alternative 2, except for this last sentence. Essentially, what that would do -- That’s the only difference between Alternative 2 and 3, and what that would do, in practice, is, if in the future a stock assessment for any of these stocks is done, again, and the SSC reviews the assessment and says that a different SPR proxy, whether it be 40 or 20 or something, but it could make that recommendation, and, if the council agreed, they could simply note that in a plan amendment, and that would be that, rather than having to go through a range of alternatives when it doesn’t always make sense if the SSC has recommended something that they feel is better.

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

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

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

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

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

CHAIRMAN POWERS: Thank you. Rick, did you have a comment?
DR. METHOT: Yes, on exactly that point, and thanks for the opportunity to comment. We’ve been talking about this in the working group a bit, and it’s not enough to say yield at some F level, because it’s also conditioned upon what you believe the recruitment level will be that that F will be applied to. Is it yield at steepness one, or steepness as estimated in the assessment, or yield at recent average recruitment? Something needs to be clarified with regard to expectation, or maybe you leave it open, but I think leaving it unsaid about what are the expectations for recruitment leave it incomplete.

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

DR. FROESCHKE: Do you mean value in terms of a landings? Is that what you’re --

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

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

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

What it would do was essentially serve as a placeholder, such that, when we do get an assessment for cubera snapper, either as a fully age-structured assessment or something on the data-limited side that could provide an MSY proxy, it would allow us to move forward. Is that adequate?
DR. CALAY: Yes, it is, and I think Rick’s point is very well taken. It’s something that we’ll need to discuss, is whether we specific, in this alternative or these similar alternatives, how we’re going to make assumptions about recruitment into the future, because, even for red grouper in the past -- For example, I think many of you recall that we have an assessment of red grouper and that we have an FMSY proxy on the books, but there came down a conversation about whether we would actually define MSY, because we didn’t trust the equilibrium projections, and so that’s because we have uncertainties about the assumptions made and the projections, including recruitment, and so that issue is still on -- We have not solved that problem yet, and let’s put it that way.

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

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

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

MR. ATRAN: I have a comment and a question. The comment is, as far as deciding what recruitment index to use or steepness, I believe the intent was not to get too prescriptive in the amendment and leave as much as possible to the stock assessment on some of those parameters, and so probably the way it’s written right now is adequate.
The question I had is the alternative, as it’s written, says the flexibility to make changes in the future only applies to the four species covered in this action, and is that your intent, or did you want this to apply to all species, or is this already accounted for somewhere later in the amendment?

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

CHAIRMAN POWERS: Thank you.

DR. MACLAUCHLIN-BUCK: What is the timing for this? What is the council doing with this document in August?

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

DR. MACLAUCHLIN-BUCK: Is it an EA, or -- I guess there is no effect analysis in the document that we have, and so that’s coming though?

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

CHAIRMAN POWERS: Thank you. Doug.

MR. GREGORY: I think Steven has a good idea, that we need to include a similar phrase with all of these, because the analysis we have here for Alternative 3 explains how it streamlines making a change without going through a major plan amendment if
everything is straightforward, but the other thing that Alternative 3 does is it helps the SSC, in the future, from falling into the trap that, well, this is what the council says it is, and this is what we have to do and we can’t change it. We have had that problem in the past. This explicitly says the SSC can recommend a change, and we don’t have to just do what is on the books, and so that’s, to me, the most important aspect.

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

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

MR. GREGORY: Can’t we just take that sentence and take out the species, the yellowedge grouper and mutton snapper and yellowtail snapper and black grouper, take those out, but also add, before the phrase “the MSY proxy”, “the MSY or MSY proxy”, so that it will fit the parallel construction later in the sentence, where it says “FMSY or F proxy”, or maybe it should say “FMSY proxy”. Then let’s say that for all reef fish species.

CHAIRMAN POWERS: Can you guide Charlotte through what you’re -- Because I’m not sure exactly what you’re taking out of this paragraph.

MR. GREGORY: Take the species out of the last sentence.

DR. FROESCHKE: I think you could just say “reef fish stocks” and get rid of the species. You could get rid of everything up to “or future assessment” and then --

MR. GREGORY: Delete everything except the last sentence.

DR. FROESCHKE: Then I think you say, instead of the black grouper, mutton snapper, yellowtail, you could get rid of all that and just say “for reef fish stocks and red drum”, I think.
MR. GREGORY: After the words “the MSY”, add “or MSY proxy”.

CHAIRMAN POWERS: All right. First off, that is the motion. Is there a second? We have a second. Is there discussion?

DR. MACLAUCHLIN-BUCK: A quick question. Okay, and so I know that this action is for assessed stocks without the MSY defined. For the other ones, gag and red grouper and red snapper, is that what you use for those? I feel like it should all be consistent, and so, if you already have something on the books for gag, red grouper, and red snapper and all of those in Table 1.1.1, that should be consistent.

DR. FROESCHKE: In my mind, I guess the way -- It would allow that, and so, based on what I suggested there for reef fish and red drum, and this may not be the right way to do this, but, if we did do a red snapper assessment later, and they decided that it should be F25, we could do that.

DR. MACLAUCHLIN-BUCK: That language now covers all of them, all of these that are in 1.1.1.

DR. FROESCHKE: I don’t know if that’s what we want to do. Carrie, you’re shaking your head no. I mean, you could either do that and say for the stocks applicable by this action or something, but I guess the way I would probably do this, in practice, is I would add this as a separate alternative in Actions 1.2 and 1.3, just the last one that could be selected in addition to the other preferred alternatives, and say, for the stocks applicable in this action, this could be done, something like that.

CHAIRMAN POWERS: Carrie.

EXECUTIVE DIRECTOR SIMMONS: Thank you, Mr. Chairman. Yes, I think that’s a good suggestion from John, because I think that wasn’t our intent, to go backwards and change all those other stocks that we already have criteria for. The purpose is to set and establish these criteria for stocks that we’ve already had assessments that we don’t have clearly laid out and then for the unassessed stocks, and so the purpose of this was in the future.

Like, for example, we’re getting a yellowtail snapper assessment fairly soon, and that’s shared with the South Atlantic Council, and then we can more quickly react with that, and that was the purpose of putting it in this action, and so I think you could do something like what John suggested, but, really, it should say when we get an assessment, because, for many of those
stocks, we have no assessments for, when you go to the next action, but, if you want to make the recommendation, we’ll give it to the council, and then we’ll figure out how to put it in the document.

**CHAIRMAN POWERS:** Doug.

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

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

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

**CHAIRMAN POWERS:** Will.

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

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

**MS. MARA LEVY:** I just wanted to clarify that, even with this
language, the council would still be changing the MSY or MSY proxy through a plan amendment, and so, the idea that it’s not going to require a plan amendment, don’t go there.

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

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

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

If my motion has no helpful meaning, they I would say that Alternative 3 has no helpful meaning, and so whatever we want to do, and I’m not wedded to it, but it made sense to me. Again, what I have seen in the past is the stock assessment people or the SSC saying, well, we can’t consider that proxy, because the council has on the books this proxy, and so this is the only proxy we can do, and this alternative and that wording encourages the analysts, or the SSC, to think outside of that council box, and it’s not just 30 percent. If we recommend 35 or 25, we’ve got that flexibility. In the past, we didn’t think
we had that flexibility, and, again, that’s the most important part of this, to me, rather than the streamlining of the plan amendment process.

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

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

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

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

**CHAIRMAN POWERS:** Wonderful.

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

I understand talking about don’t get wrapped around the language and the motion, and so maybe something that we could do, because this is -- We are not reviewing data and giving scientific expertise on that at this time, because the document isn’t at that point, but this is an opportunity for the SSC to be involved in the procedural aspect of what is trying to be put together here and how you would be able to best use your
scientific expertise when it’s time to make these
recommendations, as they get assessed in future assessments.

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

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

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

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

CHAIRMAN POWERS: Paul.

DR. MICKLE: What is going to occur is an additional alternative
is going to be added, and I think that’s a good thing, and I
think that’s what the SSC’s role should be at this point in
time, is adding or recommending alternatives, whether they be
present or feed off of present alternatives in the document, but, again, that’s just an opinion.

CHAIRMAN POWERS: Thank you. Shannon.

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

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

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

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

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

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

Essentially, Alternative 1 would be the no action, just like Alternative 1 in Action 1.1, which says that you wouldn’t define an MSY proxy, and the consequence is that you wouldn’t be consistent with the requirements of Magnuson, and so this is what I would call a non-viable alternative.
Alternative 2 and 3, I will kind of talk generally about their structure. These, again, are two complexes, and Alternative 2 would address only the shallow-water grouper complex, and that includes four stocks of black grouper, scamp, yellowmouth, and yellowfin grouper.

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

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

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

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

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

**CHAIRMAN POWERS:** This is something that, in general with stock
complexes, that I’m not sure about, and that is that, essentially, the way you would operationally determine the SPR is looking at the life history and so on, and, in this case, in the one on the screen here, that would be for black grouper, presumably, and so you’re kind of assuming that all the other species are about the same.

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

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

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

DR. CALAY: Yes.

CHAIRMAN POWERS: Okay. Luiz.

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

CHAIRMAN POWERS: Doug.

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

We’ve already got black grouper on the books, and I think, Joe, we’re in the situation, and the reason for this amendment, is we
have to specify something for these species, and we don’t have a
stock assessment, and so an F of 30 percent is simply a
placeholder until we get an assessment, and we know now that we
have the flexibility to recommend whatever is appropriate when
we get an assessment, if there is something more appropriate,
and so I wouldn’t get hung up on whether F 30 percent is
appropriate for everything, because it’s just a placeholder so
we can get it on the books, and it’s a technicality and not an
actual recommendation to manage that fish that particular way,
because we don’t have an assessment.


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

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

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

CHAIRMAN POWERS: Steven.

MR. ATRAN: A couple of things, and one is kind of minor, and
it’s just a wording, but all of these alternatives should say
the MSY proxy for grouper is the yield at FSPR. You have that
in the discussion, but that wording should also be in the
alternatives.
The other thing that I’m going to get into here is, if you don’t have a stock assessment, the National Standard 1 Guidelines state that the status determination criteria should be measurable and objective, and, as far as being measurable, if you don’t have a stock assessment, you have no estimate of F, and you have no estimate of yield at F, and so you’re not abiding by the guidelines in the case, and I would give serious consideration to coming up with some sort of a proxy that does not depend upon fishing mortality rate, if you do that. I was going to bring this up later on, when we talk about optimum yield, but it really fits into here as well.

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

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

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

CHAIRMAN POWERS: First Jim and then Bob.

DR. NANCE: This is maybe a procedural question, but, in the past, when you pick an alternative, the rest are gone, and so, if you pick Alternative 2, does that mean that you don’t
establish anything for everything else?

DR. FROESCHKE: I think it says so in the discussion, but this is one, and I should have mentioned it, where you could select multiple alternatives, and, really, what we struggled with in the development of this action is how to make it clear what choices is the council actually selecting, and so, in this case, they would essentially be selecting multiple preferred alternatives, and their choice would be really the options, and so, for each alternative, you would need to select one option, and so you can select all the action alternatives, 2 through 9, as preferred, and you can select one option within each of them.

DR. NANCE: So, in this case, all the alternatives are always going to be selected, and you’re just selecting an option under each alternative, and so should they be renamed then? I would -- Maybe I am -- That’s just a question.

DR. LORENZEN: I was confused by the same thing, and I was wondering if maybe they should all be sub-options or something.

DR. FROESCHKE: Earlier, we had them in a big table, but then it wasn’t clear what choice the council was actually being asked to select, and so I kind of ran through all of that, and so, if you all have a feeling on how it could be better, it makes no difference to me.

CHAIRMAN POWERS: All right. Bob, you had a --

MR. GILL: Thank you, Mr. Chairman. My question is clarification of the indicator species or not, and Option a includes an indicator species, and Option c takes it out, and so, Option b and d, is there an indicator species or no?

DR. FROESCHKE: No, and the reason that the parentheses is in Option c is to make it clear what the difference was between Option a and Option c, because we even confused ourselves at various points.

MR. GILL: Thank you.

CHAIRMAN POWERS: Given that, I am of the school of thought with Doug and just say F30 percent SPR and see how it plays out as information becomes available. Do we want to put that in a motion? Again, I will assign this motion to Doug, that, in general, Option c for these alternatives is a good way to move forward.
MR. GREGORY: Well, not Option c, because I noticed that, later on, where there is not discussion of any indicator species, Option b is at 30 percent, and so I would just say, for Alternatives 2 through 9, the SSC recommends an MSY proxy of F at 30 percent SPR for the species under consideration.

Now, John from Alabama just suggested that Alternative 9 is goliath grouper, and so it has a different range, and I think, currently, it’s 50 percent, but why is it listed here then, if we already have it?

DR. FROESCHKE: John, that’s the SDC definition of the South Atlantic Council and not the Gulf Council.

MR. MARESKA: The 50?

DR. FROESCHKE: Yes. They have 40 percent.

MR. GREGORY: Then I would make my motion for Alternatives 2 through 8, an FMSY proxy of 30 percent, and, for Alternative 9, an FMSY proxy of F40 percent, to match the South Atlantic Council. Thank you.

CHAIRMAN POWERS: Okay. Is there a second to this?

SSC MEMBER: Second.

CHAIRMAN POWERS: All right. Do we want further discussion, clarification or discussion?

DR. MACLAUCHLIN-BUCK: Okay, and so this is what you would recommend to the council to be their preferred options in this?

MR. GREGORY: Yes.

DR. MACLAUCHLIN-BUCK: That is what the council is looking for from the SSC?

DR. MICKLE: I am not going to speak for the whole council, but, essentially, in the past, yes, recommendations for preferred are given, and given vast respect, from the SSC for consideration.

CHAIRMAN POWERS: Thank you. Mara.

MS. LEVY: Thank you. I appreciate the motion. I just did want to point out that the National Standard 1 Guidelines, when they talk about complexes, say that, where practicable, stock complexes should include one or more indicator stocks, and so
they don’t have to, but it would be nice, given this motion, if you may have had some explanation about why you don’t think an indicator stock for the ones that have assessed species in them is appropriate. It would just help with background.

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

CHAIRMAN POWERS: This motion actually doesn’t say anything about indicator species. All it’s saying is, for those species, this is the preferred alternative, in terms of FSPR, the motion itself.

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

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

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

Going back to Mara’s comments, do we have any advice about indicator species?

DR. FROESCHKE: I don’t have any advice, but I do have a question. Is it the Science Center’s perspective that black
grouper is now -- That the stock status is unknown? Carrie, I
don’t think we’ve been notating it that way in the amendment,
and I guess the follow-up is, is there a process in which, once
it goes to an assessment, and that assessment is rejected, is
there some way that actually transforms from known to unknown?

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

**CHAIRMAN POWERS:** Luiz.

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

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

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

**CHAIRMAN POWERS:** Thank you. I think, in terms of the actions
we’re dealing with here -- What we’re really hearing is perhaps
black grouper is not the indicator species that we thought about
and that we ought to make recommendations accordingly. Mara,
did you have a quick comment?
MS. LEVY: Thanks. Just to John’s question, and so I wouldn’t — Stock status is what NMFS says the stock status is, and so, until that is changed, it is what it’s listed as. Whether it’s appropriate to be an indicator species, based on issues with the assessment, that’s, I think, a different question, but, to answer John’s question, I wouldn’t change the way you are characterizing the stock status until NMFS actually changes the stock status.


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

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

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

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

CHAIRMAN POWERS: Jim.

DR. TOLAN: I thought that was triggerfish that led to that not suitable for management advice, but, sitting on the scamp data workshop right now, I think all of these are going to suffer from the same ID problems coming in from the recreational catch data, and so I don’t know that one of these is going to make a
better indicator than any of the others.

CHAIRMAN POWERS: Kari.

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

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

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

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

Does anybody else agree with me? Taking black grouper out, that would only leave yellowedge as the indicator for a deepwater grouper complex. If something indicated that there was a problem with yellowedge, and the status was changed by NOAA Fisheries, and that meant that other species in that complex also were now subject to those regulatory requirements for overfishing or overfished without your review, the SSC’s review, and I think that’s my problem, is that it would automatically, possibly automatically, have a status change without you guys really reviewing it and seeing if that is warranted for that species.
CHAIRMAN POWERS: Thank you. Let me interject here. Our collective memory has been jogged, and this is from a previous meeting, but the SSC moves to accept the SEDAR 22 yellowedge stock assessment report as the best available scientific information. Further, the SSC concludes that the report provides sufficient guidance to make management recommendations, and the motion passed unanimously, and so we’re really not arguing then about the yellowedge as a potential indicator species, unless you have some other argument for not, and so, going back to Kari’s comment, there is some question about using indicator species and assuming the results of that species translates to the results of all the other species, if you happen to be overfishing, for example. Then the question, to my mind though, is, well, yes, you could go wrong that way, but then what’s the alternative? Shannon.

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

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

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

In that case, you would have the opposite effect, where you might say everything is healthy, because yellowedge is healthy, but warsaw is overfished, and I understand what Shannon is saying, and my question to the NMFS people is, if we have a complex, and we have an indicator species, and that indicator species is not considered overfished, in your famous database listing, does that mean all the other species are also listed as
not overfished, which makes management look good? I mean, is that part of this, also?

DR. METHOT: My understanding is that it would not be for the individual species. It would just be for the complex, and so it’s a question of whether or not the FMP has as a management unit the complex or if the FMP has as the management unit the individual species of the complex.

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

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

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

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

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

CHAIRMAN POWERS: In many cases, it’s ones that have any data.
DR. ROPICKI: One thing I was noticing was, if you look at it from the economics, at least from the commercial side, yellowedge grouper makes sense. I mean, it’s in that complex, and it’s by far the most important species, but black grouper is kind of the tail wagging the dog. It’s about a fourth of the catch of the scamp, in terms of since IFQ management.

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

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

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

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

DR. FROESCHKE: Yes and no. I guess, in terms of other options, there’s two ways you could look at that. The straightforward is are there different SPR proxies you would want to consider, and I don’t think that’s what you’re talking about. It’s is there another way the shallow-water grouper complex could and should
be configured, and, if that’s what you’re talking about, I think
that we would have to think carefully about that, because the
way the management of these, including the ACLs and everything
ever else, is set up in this way, and so I’m not sure if that would
matter or how we would come about developing new complexes sort
of within this framework, and it seems like that might be
something different.

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

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

DR. FROESCHKE: Okay. Well, I do understand what you’re asking
for now, and so thank you for the clarification.

CHAIRMAN POWERS: Ryan.

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

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

CHAIRMAN POWERS: Then all of our problems are solved, but, yes,
that’s exactly how one would hope that the science sort of
evolves on this. Any more comments on these? Hopefully no.
Then let’s move on.
DR. FROESCHKE: We’ll go to Action 1.3. Sub-Action 1.3 hopefully is more straightforward. It’s a single stock, and it would address the MSY proxy for red drum, and this is the only stock in this FMP. As you all know, the ABC and OFL for this are zero in federal waters, and so there is no allowable landings of this in federal waters, although it’s heavily targeted inshore.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

MR. BLANCHET: I just wanted to interject a little bit of history here. In terms of Alternative 2, this really goes back to address the where did this 30 percent escapement rate come from, and remember that this is really related to a 20 percent SPR, because the estimate was that we would need some buffer between harvest on the juveniles and what the spawning stock would be, and so the escapement of 30 percent, back in the day, which was probably the 1990s, was equivalent, at that point, to approximately 20 percent SPR, and so your Alternative 2 and your Alternative 3 have really two functionally different FSPR MSY proxies.
CHAIRMAN POWERS: Thank you. Good point. The point you’re also making too, Harry, is that, the decisions that were made at that time, the escapement was trying to address a particular SPR, and it was doing it through escapement, but the two are not equivalent.

MR. BLANCHET: Yes.

CHAIRMAN POWERS: Will and then --

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

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

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

CHAIRMAN POWERS: Thank you. Steven.

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

Then, in a later amendment, it was raised to 30 percent, and that’s why the language is in terms of spawning stock biomass,
rather than SPR, but, again, this comes back to I was trying to
come up with something that would give a measurable value to the
MSY proxy, and I thought this might be able to do it.

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

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

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

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

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

In that thirty-year time period, the states have developed and
honored their own methods for determining escapement and have
their own reasons for using those methods individually, but,
again, we have no mandate for the states to use the same method
or any process to achieve that, presently.

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

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

CHAIRMAN POWERS: You’re talking about Alternative 2 and the
paragraph under the discussion?

DR. ROBERTS: Right.

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

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

The states have found, basically, or have been forced to find a
work-around, because they are basically looking into that more
inshore estuarine and near-coastal portion of the stock, but, if
this is really for management of the species in federal waters,
I cannot see why we would depart from MSY or the regular sets of
MSY proxies that we have been considering for other stocks.
DR. TOLAN: To that, I would definitely agree with that, with the only caveat being that, in SEDAR 49, when we tried to take on red drum in a data-limited format, it was completely dropped, because you couldn’t come up with that kind of number for that species, and so it’s very consistent with everything else we’ve discussed, and so the 30 percent, I think, is a good number to go with, just with that caveat that we tried, and the data needed for that is currently being collected.

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

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

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

CHAIRMAN POWERS: This is where I have, I guess, a misunderstanding. I don’t think Alternative 3 says anything about federal waters. I thought we were just dealing with the stock.

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

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

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

DR. NANCE: I will second that.

CHAIRMAN POWERS: We have a second. All right. Again, as this meeting gets characterized in the minutes and in the summary and what Luiz will convey to the council, is this discussion we had about the differences in individual states, and we recognize that, but there are a number of ways that that can be
approached, with still the overall MSY proxy being 30 percent. Do we want any more discussion about this?

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

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

MR. BLANCHET: That is incorrect.

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

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

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

DR. FROESCHKE: I agree, and I guess that was my understanding, and I guess we’ll have to dig into that.

DR. BARBIERI: Jim, can you repeat that part? I don’t --
**DR. NANCE:** I am just saying that it says in the document here, in Alternative 3, it says that, as discussed above, the current policy, which is talking about what we have on the books right now, the current policy of a 30 percent escapement is considered approximately equivalent to a 30 percent SPR, and so, if that’s incorrect, we need to change that sentence.

**CHAIRMAN POWERS:** Bob.

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

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

**CHAIRMAN POWERS:** Ryan Rindone.

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

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

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

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

**CHAIRMAN POWERS:** We do have this motion on the floor. John, you were the one that made the motion, and I don’t know the Roberts Rules of Order, but, given the uncertainty about what the existing measures were based on, the 20 percent, perhaps, in terms of the amendment, do you want to withdraw the motion, or do you want to vote on it?
MR. MARESKA: I will withdraw it until we can get some clarity as to what it was actually based upon, 20 percent or 30 percent SPR.

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

DR. FROESCHKE: Okay. That’s helpful.

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

(whereupon, a brief recess was taken.)

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

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

The other thing on this one is the Alternative 1 is different, and this one, in the generic whatever that was in 1999, it was an amendment that established SDC for the reef fish stocks. However, it was rejected, with the exception of the MFMT, and so all reef fish stocks have an MFMT of F 30 percent SPR, for red drum and reef fish, with the exception of red snapper, which is 26 percent, and goliath grouper is 50 percent, and gray snapper is 26 percent, assuming the amendment that they’re going to take final action on, we hope in August, is completed and implemented.
In this case, Alternative 1 essentially is a viable alternative. Alternative 2 essentially says, for all the stocks in this one, that we would define an MSY proxy in Actions 1.1 through 1.3, and we would set the MFMT equal to the MSY proxy for each stock or stock complex, and so that would essentially -- Whatever you all would decide in those three actions, the MFMT would mirror that, and it would change correspondingly.

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

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

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

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

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

**SSC MEMBER:** What do you mean by “can have”?

**CHAIRMAN POWERS:** There can be situations where a stock is in that position.
DR. CALAY: Yes. I mean, you can be above F rebuild, but below FMSY, or its proxy, and so you’re not overfishing, but you remain overfished, and you are rebuilding slower than would be expected, and that’s technically not, according to my understanding, overfishing.

SSC MEMBER: As long as you make your target year.

DR. CALAY: You don’t necessarily make your target year. That’s my point. It might actually delay the -- It could, potentially, delay the rebuilding plan, and you would not make your target in the specified time.

CHAIRMAN POWERS: We have a comment, first.

DR. METHOT: I think my understanding on this is that I would support what Shannon says, in that you would know there is an F OFL and an OFL associated with it. You still can’t go there. You still are bound to the F rebuild. The F rebuild is its own limit. It’s just that it’s a lower limit than the OFL limit, and so I wouldn’t say that you can go above it. You can’t intentionally go above it. You are still bound by it, but it’s not identical with the presumably higher F OFL.

CHAIRMAN POWERS: You’re only bound by if deviating from the F rebuild would delay the recovery over a long enough period of time, I suppose. Doug.

MR. GREGORY: If F rebuild is ABC, then we should not be putting a buffer on that, because we have been putting a buffer on F rebuild, and so we’ve got ABC prime, and we shouldn’t be doing that, because it’s not OFL. We are not required to do it. I won’t say that we shouldn’t be doing it, but we’re not required to do that, but this is new to me, and I understand what you’re saying, because we exceeded F rebuild in 2017.

DR. METHOT: I would think that the analysis that created the F rebuild would have taken into account itself the scientific uncertainty in calculating what F rebuild us, and that should take into account scientific uncertainty. If there is additional management uncertainty about managing to the annual target, then that might be a reason for an additional buffer beyond F rebuild, but I have a hard time seeing that there is an absolute necessity to buffer on F rebuild to get to a lower ABC. I think -- I mean, I think the catch that comes from an F rebuild analysis could be treated as the ABC.
Karen or Mara, do you have any sense on this, whether or not F rebuild -- The catch that comes from an F rebuild analysis, that catch, which will be below OFL, that that catch would be the ABC and that there is no need for an additional buffer below that, in order to get to the ABC level, because the presumption would be that the scientific uncertainty in rebuilding has already been taken into account in order to come up with the F rebuild, so that that can be the ABC.

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

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

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

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

DR. METHOT: This is partly semantics. I mean, I think, from my perspective, and the way we’ve characterized it, it’s that a rebuilding plan is a temporary deviation from a long-term sustainable plan, and, during the duration of it, the operational limit is the F rebuild, and that doesn’t mean the MFMT goes away, but it’s just temporarily not the operational limit. The limit is now the F rebuild.
CHAIRMAN POWERS: But, in terms of operational -- From an administrative standpoint, you have to do certain things when it’s overfishing, whereas, in other cases, you don’t. Steven.

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

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

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

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

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

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

DR. CALAY: What we’ve given you when the stock is declared
overfished is a rebuilding plan, and, in that case, OFL is
calculated using the FMSY, which is generally a proxy, and the
ABC is calculated using F rebuild, based on some period of years
specified generally by the Gulf Council.

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

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

CHAIRMAN POWERS: So there is no bite in exceeding the F
rebuild.

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

CHAIRMAN POWERS: John.

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

In this case, if there was a stock assessment that said some
stock was severely overfished, and so we had to cut harvest by
say 90 percent, and so, at that point, if you’re trying to catch
that something that far below, then you still wouldn’t send us a
letter unless we exceeded the catch associated with FMSY, which
would be a really big number, and so it would seem, in cases
where you are severely overfished, it would almost be impossible
to be overfishing until you get closer to the rebuild, but that
can’t be correct.

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

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

CHAIRMAN POWERS: It’s got to be less than the FMSY, or the more
traditional MFMT.

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

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

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

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

DR. FROESCHKE: Okay. So, for Alternative 2, you’re satisfied
with the wording. Alternative 3, we’ll work on it and bring it back at some point later, but, for now, we can move to Action 3?

CHAIRMAN POWERS: Yes. No, I guess not. Doug.

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

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

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

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

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

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

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

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

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

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

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

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

In the more recent past -- Well, MSST can be defined between one and 0.5. 0.5 is as low as we’re allowed to set this, and, in the more recent past, we’ve had Reef Fish Amendment 44, which we looked at seven reef fish stocks and set them all at MSST equals
0.5 times BMSY, and then the council is wrapping up this gray
snapper amendment, which would also set gray snapper at MSST of
0.5, and so that would be Alternative 4. Alternative 3 was
intermediate to Alternative 2, the one minus M. Of course, it
depends on what M is for each stock, and so this would be the 75
percent.

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

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

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

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

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

DR. NANCE: Or past 50 percent.

CHAIRMAN POWERS: Wait a second. I’m not sure that I heard all
of the side comment, and so, whoever made the side comment, make
it on the --
DR. NANCE: I was just saying that I didn’t know if you could go past 50 percent, and that’s all. Kai said don’t go down to 50 percent, and I said don’t go past.

DR. LORENZEN: You should go past anyway, right, and it’s at 50 percent now, but what Shannon just said is the analysis seems to suggest that you shouldn’t even go down to 50.

DR. CALAY: In all cases, we could recover the stock, I think within seven years, at F equals zero from 50 percent.

DR. LORENZEN: But you don’t really want to be there, right?

DR. CALAY: You don’t necessarily want to have such strong management measures required to recover a stock, is my point, and so, if you want to have more constant catches for the fishing community, the advice from the Science Center would be not to let the stock levels go so low before you require a rebuilding plan, because that can lead to very restrictive catch measures on the fishery.

CHAIRMAN POWERS: What Kai has suggested is a recommendation that is more reflective of just saying that you shouldn’t go down to 0.5, which is less restrictive than the recommendation of the Center, which was basically something around 75 percent. Either one is fine with me. Do you want to make a motion?

DR. LORENZEN: That would mean that we are not recommending Alternative 4 or 5, right?

DR. FROESCHKE: Yes, and this would be Alternative 3.

DR. LORENZEN: We are recommending Alternative 3, 2 or 3. I think the point is that 2 seems fine to me, but you just don’t want to be at 4 or 5.

CHAIRMAN POWERS: 2 or 3 are more or less equivalent in the way they’re actually applied, and so you could say the glass is half empty or half full, depending on which way you want to word it.

DR. LORENZEN: Right. Well, I would say 2 or 3 be the preferred alternatives.

DR. NANCE: Or we could say it the opposite and not recommend 4 or 5.

DR. LORENZEN: I wanted to strike a positive tone.
CHAIRMAN POWERS: So that is a motion. We have a second by Jim Nance. Doug and then Kari.

MR. GREGORY: If I remember right, most of our species have an M of less than 0.2, and so there is a big difference between the two.

CHAIRMAN POWERS: I don’t know how big, but --

DR. FROESCHKE: If we pull up Table 2.2.2 on the document, that is some representative M from reef fish stocks in the Gulf.

CHAIRMAN POWERS: I think Doug’s comment made a good point that a lot of the Ms that we have are less than 0.25, and so, therefore, there is a difference between Alternatives 2 and 3, and so, in the spirit of what the original motion was, we started talking about the glass half empty or glass half full, and we could word it the other way as well.

DR. LORENZEN: Yes, I think we can go to the glass half empty. Alternatives 4 or 5 not be --

DR. NANCE: Do we need to include 1 in that then?

CHAIRMAN POWERS: No.

DR. NANCE: If we’re saying are recommended, it would be --

DR. LORENZEN: Right, and it has to be the --


MR. MARESKA: In regard to Alternative 5 that includes accepting the South Atlantic’s MSST definitions, how much is that going to conflict with Alternative 2? Is that too much of a conundrum there?

DR. FROESCHKE: You’re asking if we did the one minus M versus the 75 percent for those four stocks, and is that what you’re asking, how different are those numbers?

MR. MARESKA: Yes.

DR. FROESCHKE: For goliath, it’s quite different. For black grouper and yellowtail, it’s 0.19, and so pretty different for most of those.
MR. GREGORY: A quick question. Is goliath a jointly-managed stock?

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

CHAIRMAN POWERS: Kari.

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

DR. FROESCHKE: Which table is that?

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

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

CHAIRMAN POWERS: Thank you. Kai.

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

DR. MACLAUCHLIN-BUCK: But what about the -- Would you recommend that they go back and they look at all the ones where they do have the MSST at 0.5, and that they go back and review that as well?
DR. LORENZEN: Probably.

CHAIRMAN POWERS: That’s a separate motion.

DR. LORENZEN: It’s a separate motion, but yes.

MR. GREGORY: I am sure Luiz would love to present that to the council.

CHAIRMAN POWERS: This recommendation is a bit stronger than some of the others we have there, and it has lots of ramifications about other species where there is a 50 percent there, but, essentially, what we’re saying by this recommendation is that, for these things in Action 3, for these particular species, given the analysis that the Center has done, we would be reticent to establish 50 percent, and there is lots of other issues associated with that, but, of course, Luiz will explain that completely, but that’s kind of where we stand, in the way that I interpret this motion, and recognizing that, yes, there is a whole lot of species that have 50 percent, and certainly in other regions even more so.

Are we at a point that we can vote on this? Given Kari’s reticence in voting, all those in favor raise your right hand. Is somebody counting? I don’t think it matters.

MR. RINDONE: It’s an overwhelming majority.

DR. FROESCHKE: Eighteen is what I had.

CHAIRMAN POWERS: Opposed. Four. Then we have the people on the webinar, if they want to --

MR. BLANCHET: I am opposed.

MR. RINDONE: It carried with four opposed.

CHAIRMAN POWERS: The motion carries. Again, it’s up to Luiz to kind of explain some of the objections to this and how they relate to the preferred alternatives. Can we move on?

DR. FROESCHKE: Please. Action 4, we saved the best for last. Action 4 deals with optimum yield, and I’m going to just start by -- If you could scroll down below the alternatives, which there are many, in that first paragraph above Table 2.4.1.

There is a definition that OY should be based on MSY as reduced
by relevant economic, social, or ecological factors, and then,
to the degree -- There is talk about uncertainty, and, then, to
the degree that MSY estimates and management controls are
lacking or are unavailable, OY should be set farther from MSY.

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

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

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

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

CHAIRMAN POWERS: Thank you. This has always been difficult for
me, because a lot of the response is -- Not only here, but
traditionally, it’s to define FOY as just a percentage of MSY,
and, yes, it will end up being that, but how you define that
percentage is defined by socioeconomic factors and that sort of
thing, and so, judging goodness or badness of 50 percent versus
75 percent versus 90 percent isn’t being related to what, quote, unquote, optimum yield ought to be, and so it’s hard to make a discussion without getting into more of the details about the socioeconomic objectives. Will.

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

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

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

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

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

CHAIRMAN POWERS: Kari.

DR. MACLAUCHLIN-BUCK: I agree with that. I feel like maybe -- I don’t know, but maybe just because we’ve been in a world of ABCs and ACLs, and, if you have a value or, I guess, a yield in
pounds or something defined for OY for a species or a complex, and your removals exceed that, what happens -- What does that mean for the fishermen, and what does that mean for the fish?

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

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

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

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

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

DR. PATTERSON: Yes, that’s a really good point, and Clay did an analysis a couple of years ago looking at the recreational red snapper fishery versus commercial, and one is access, and the maximum economic yield may exist with a stock fished well below BMSY, and the other would perhaps want to have the stock above BMSY, so you have more constant catches that could be predicted
into the future, and so it’s not -- I mean, you have so many different sectors in some fisheries, and it’s really difficult to come up with one approach or one number to satisfy that.

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

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

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

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

CHAIRMAN POWERS: Thank you. Doug.

MR. GREGORY: I am looking at the Restrepo document from 2006 or 2007, and they reference a paper by Pamela Mace, where she looked at 75 percent of the fishing mortality rate at MSY, and she didn’t look at 50 or 90 percent, but, at 75 percent, the conclusion was that the equilibrium yields would be about 94 percent of MSY, or higher, and that equilibrium biomass levels would be between 125 and 131 percent of BMSY, and so it was a bit more conservative.
In the Restrepo document, they did not relate that to OY, but they do have a number of analyses of the 75 percent, and they say that fishing at 75 percent of FMSY obviously would reduce the probability of a stock declining to MSST, which in this discussion was 50 percent.

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

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

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

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

CHAIRMAN POWERS: Sure. Steven.

MR. ATAN: Thank you for indulging me on this. I was going to try not to say anything, but this section has been heavily rewritten since I last saw it, and I do think we need to have OY, if for no other reason than, as Mara said, it is in the Magnuson Act, and we need to figure out a way to use it, because it seems to have fallen by the wayside with all of these
additional reference points that were adopted in 2006.

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

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

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

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

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

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

**DR. PATTERSON:** In the act itself, there is a lot of room for interpretation about things and about OFL and the ABC and the ACL, and ACT is not even there. That came in the guidance, and so they have these guidance documents to try to operationalize the act, and there is nothing in the guidance that talks about
optimum yield, as far as specifying how to estimate it or what it might represent.

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

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

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

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

There are situations when there is a major economic benefit and social benefit, in terms of stability of landings over time and avoiding stock fluctuations that could be caused by you always fishing the stock down to a limit reference point or around the limit reference point, and so I think the advantage of OY is to provide some level of long-term stability to that stock that would be beneficial to industry, or should be.
CHAIRMAN POWERS: That’s essentially what has been suggested, other sorts of metrics that ought to be considered.

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

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

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

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

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

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

(Whereupon, the meeting recessed on July 30, 2019.)
July 31, 2019

WEDNESDAY MORNING SESSION

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

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

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

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

CHAIRMAN POWERS: Thank you.

DR. ROBERTS: The origin of the question is that -- Is anyone able to certify that that was based on the best scientific information available, or is it value judgments? Let me clarify. You go into fisheries management, and the goal line is OY, and we go through lots of discussion about the components that go into various models, and then, when you get to the goal line, it doesn’t seem that the rigor is there, or at least the
SSC is involved, and maybe we shouldn’t be involved, but that is my concern with those numbers that crop up like that without a lot of documentation or rigor.

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

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

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

I think, if it is brought up in a more formal way, maybe as an agenda item, or maybe just as discussion when the SSC report is given at council, to kind of prod the -- Get that regional discussion on OY and how it feeds into maybe some guidance for the SSC would be hugely beneficial, I am thinking, and I would like to know if you all would think that would be beneficial, because I know that guidelines are helpful, because the science is so in-depth, and these meetings are so heavy on the material, that, obviously, guidance increases efficiency, and so I would love to hear you all’s thoughts on it, and also what you all think of actually formalizing a discussion on the council floor of OY and how it feeds into management advice for the SSC, giving that guidance as well as maybe a formal agenda item in a
future meeting, but, of course, that request needs to be done at
the council, but, obviously, your opinions are very influential
on the discussions of the council, and we definitely want to
know that, or I would. Thank you.

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

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

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

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

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

**CHAIRMAN POWERS:** Luiz.

**DR. BARBIERI:** Well, I don’t mean to overextend this discussion,
but I just think that, right now, there is somewhat of a
discontinuity between us and the council regarding this issue, philosophically, a common understanding, so to speak, from us and from the council on what our expectations are regarding setting a policy for the council that has to do with establishing OY for a whole variety of stocks in several fishery management plans.

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

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

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

CHAIRMAN POWERS: Thank you. That’s an operational way to deal with it.

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

DISCUSSION OF ALTERNATIVE ABC CONTROL RULE

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

A little bit of background here, and I think it was at the March meeting, we agreed that we need to relook at some of these
issues about the individual tiers and how we got to where we
were, and Shannon made the commitment that the Center would look
at this, and this is a response to that commitment, and so let
me, before we begin this discussion, turn this presentation over
to Shannon and kind of see where we have moved in the interim.

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

This is our concept of moving forward to revitalize the ABC
control rule, and, specifically, how to better characterize
scientific uncertainty, because, right now, the methodology of
using the tiers and dimensions table tends to produce results
that are with a very small buffer between OFL and ABC that we do
not believe fully represents our scientific uncertainty.

Most of you have seen this slide before, and I just provide it
for background material. There are all of the various levels,
the overfishing limit, the acceptable biological catch, the
annual catch limit, and the annual catch target, and this
particular presentation will focus on OFL and ABC and
establishing that buffer, which is intended to represent the
scientific uncertainty.

National Standard 1, at least when this presentation was
developed, did say that stocks and stock complexes that are in
the fishery management plans must evaluate and describe, in
their FMPs, the maximum sustainable yield and status
determination criteria, optimum yield, specify an ABC control
rule, and to specify mechanisms for ACLs and ACTs.

These are some definitions, for those who are unfamiliar with
the acronyms, but I think, here, we’re all quite familiar with
these.

Optimum yield is actually outside of the topic for
reestablishing the ABC control rule, but I did want to point out
that OY is prescribed on the basis of MSY, such that it is
reduced from MSY by any relevant economic, social, and
ecological factors, and, also, in the case of an overfished
fishery, OY would provide for rebuilding to a level consistent
with producing MSY in such a fishery.

An ABC control rule is simply an agreed procedure which is
adopted in the FMP for setting the ABC of a stock as a function
of the OFL, and each council was given the responsibility to
establish an ABC control rule based on scientific advice from
the SSC, and many of you were actually on this SSC when our
first ABC control rule was developed around 2010.

The SSCs must recommend ABCs to the council, and the SSCs may
recommend an ABC that differs from the result of an ABC control
rule, but, if they do so, they should explain why, and, in some
data-limited cases, let’s say that the ABC control rule can
involve complex drivers, based on measured stock biomass,
uncertainty forecasts, and environmental effects, et cetera, and
so we want to establish an ABC control rule that essentially can
encompass a range of stock assessment methodologies from data
rich that might have environmental indicators, et cetera, all
the way down to data-limited approaches, which may be quite
simple, and even in cases where catch only is available, and our
current ABC control rule does attempt to do that.

Here is what I was talking with John and Carrie about right
before this meeting. This is kind of the idealized functional
ABC control rule, and it differs from our current control rule
somewhat, in that, below a certain level MSST, it actually
reduces the MFMT to the origin at a stock size of zero. Our
current ABC control rule does not have a functional shape like
this, and so, John, did you want to ask the question you asked
me this morning?

DR. FROESCHKE: Sure. This was based on our discussion
yesterday in the SDC document regarding the Alternative 3 with
the F rebuild, and my understanding was that the horizontal line
that’s labeled MFMT is equivalent to the MSY proxy and the
Corresponding OFL. However, in practice, when the biomass falls
below the green-dashed line, below the MSST level, that blue
line would then correspond to the ABC, and so my question is
does that MFMT extend horizontally all the way over to zero, or
does it follow the slope of what would now be the ABC at some
level above that? Meaning, how much above the diagonal line
could you be before you are, quote, unquote, overfishing?

DR. CALAY: To clarify the question, this relates to Alternative
3, I believe it was, in the document, the SDC document, we were
looking at yesterday, and, in that document, the attempt was, in
Alternative 3, to set OFL equal to F rebuild for stocks under a
rebuilding plan, and what I had said is that, although that
certainly is within the purview of a council, it’s not
technically required by law, and so this slide refers to the
setting of an ABC control rule, and the intention, when I
included this slide, was that that descending limb would be part
of an ABC control rule and would actually describe essentially
the F rebuild, and so ABC would be based on an F rebuild in that
part, but that OFL would remain the fishing level that would
support MSY in equilibrium.

Is my understanding consistent? This graphic, when this was
developed, because we have taken this from various guidance
documents, does it refer only to the ABC control rule, and what
would one label that descending limb that goes from --

DR. METHOT: Let me just add in a little bit. I think this
might be a little bit before some of the recent changes.

DR. CALAY: Yes.

DR. METHOT: I have seen this implemented with a horizontal line
that would be the MFMT that would correspond to the proxy for
FMSY, and that would be the overfishing fishing rate, and that
would be a horizontal line, and it would not be dependent upon
biomass of a stock.

Then below that line would be a line that looked like this one,
but there would be a buffer, even at high biomass levels, for
scientific uncertainty, and so this would be the ABC control
rule. The ABC control rule is the title of the slide, and this
describes an ABC control rule, but the horizontal part would
still have a buffer between where it’s at right now and the
MFMT.

DR. ANDERSON: To that point, I agree with what he says, of
course, and he’s the head man, but you can do that thing, and,
if it was an ABC rule, I think the MFMT horizontal line should
be at 40 or something, because it says that the ABC should be
less than 50 percent, and then it goes down after that, and, if
you had it at 40 and then down, that line could represent ABC,
and it doesn’t have to be 40, but it should be below 0.5. I
have another question here, and I’ve been confused about what
does that M signify.

DR. CALAY: Right, and so this slide was developed when it was
typical in our ABC control rule to calculate MSST as one minus
the natural mortality, M, times the biomass that supports --
Times BMSY, and so M is natural mortality, and it’s been just
recently that we’ve moved mostly to MSST being a level far
lower, and it’s actually now, in most cases, for most assessed
stocks, 50 percent of BMSY.
DR. ANDERSON: If the horizontal axis is measured in biomass, and so that M is the distance on the horizontal axis, natural mortality is a fixed amount of catch, and is that what that is -- It just doesn’t make sense in the graph.

DR. CALAY: No. Natural mortality is essentially a rate.

DR ANDERSON: I know that, and that’s why I’m asking how can you have a rate on that represented by a distance on that graph.

DR. CALAY: This is just an abstract graphic, and it’s some amount of reduction that would relate to the M.

CHAIRMAN POWERS: It’s interpreted as a percentage, and the reason you have M in there is it’s somewhat related to the life history, and a larger M means that there would be more variability, or that was the argument anyway, at the time, more variability, and the whole idea is you don’t want to go through the rigmarole of a recovery plan if it’s just a little bit going back and forth around the target.

DR. ANDERSON: It’s just confusing, in terms of if you read the geometry of the graph.

DR. CALAY: I apologize for that, and I can certainly work on improving this graphic.

DR. ANDERSON: I also realize that you didn’t make this, and so I apologize to you.

DR. CALAY: Well, I could make a new one that would be better, and so I do want to point out though that, given the council’s recent adaptation of MSST for most of our assessed stocks, on this figure, if you look at the line that goes down to 1,000, and let’s assume that that is BMSY, 1,000 units, and our new MSST definitions would, in most cases, for most assessed stocks, be half of 1,000, and so it would be 500, and that reduction to the origin would not occur until after you are lower than 500. Doug.

MR. GREGORY: That gets to what I was trying to get across yesterday. If we’re having an MSST that is one-half or 75 percent of BMSY, we probably should be reducing fishing mortality between MSST and BMSY to get back to BMSY or OY, and we’re supposed to be at OY, and so I would see a diagonal, and this is something we need to discuss in the future and present to the council, going from 1,000 down to 500, or not down to -- Well, to the 500 level, going down to some angle, and then, at
the 500 level, you would have, obviously, a steeper diagonal, and it wouldn’t necessarily go to zero, because then it’s factored into the timeframe, and so it would -- You would probably go to an F of zero before you got to a biomass of zero, but, to me, the important thing is, with one minus M, it didn’t matter, and it was close together, but, if MSST is going to be a long way from BMSY, it would be prudent for us to recommend a reduction in -- Not a rebuilding plan, but a revitalizing plan, whatever we want to call it, to reduce fishing mortality below MFMT when you’re between MSST and BMSY.

DR. CALAY: I absolutely agree with you, Doug. I think that’s the first time that I have 100 percent agreed with you. It happens once in a while, but many, many different fishery management organizations employ a rule similar to that, and usually they have some B limit, some low level of stock biomass, below which F is zero, and then some line that goes from BMSY to that B limit, which is essentially what you’re saying, the only additional difference being that, below some low stock size B limit, F would be set to zero.

In our previous attempts for the ABC control rule, we tried to characterize P* using our tiers and dimensions table, and, in effect, what that does is, if you have a PDF of the catch at MFMT, which is OFL, the 50th percentile of that PDF is your OFL, and the buffer, P*, represents that difference between OFL and ABC. In most cases, our tiers and dimensions table results in a P* of about 0.4, and so the reduction is shown on this figure, but this distribution is relatively wide, and, in many cases in our stock assessments, the distributions are much narrower, and it’s resulting in a very low buffer in terms of yield between OFL and ABC, and so on the order of -- Go ahead. I see two hands up.

DR. BARBIERI: Not to be picky, Shannon, but that is not P* that you have there, and so P*, in this case, would be 40 percent, and it’s the area under -- It’s the density in the curve there.

DR. CALAY: Yes, it’s a buffer to represent -- It’s the buffer that takes it from 50 percent on the probability function to 40 percent, which is usually what I am calling a P* of about 0.4.

DR. ANDERSON: But the P* is not a difference between two deals. The P* would be a number, and P* should be 40 percent. Again, it’s not your graph, and so sorry.

DR. CALAY: A lot of these graphs were taken from various
documents, and I think the point is taken, that there is a
buffer between OFL and ABC. In this council, $P^*$ is essentially
a probability, and, in that case, $P^*$ would be drawn at 0.4, and
the buffer that is labeled $P^*$ would just be called the buffer
that represents scientific uncertainty. You people are very
harsh critics.

In this council, and in many others, the control rule may be a
tiered approach which addresses various levels of scientific
uncertainty, and so it may be that you choose, in a data-rich
condition, to apply a lower buffer than in a data-limited
condition, and it certainly was the intent of kind of national
guidance regarding ABC control rules. It hasn’t always
functioned that way for every council.

All right, and so, kind of in words, we would have Tier 1, which
would apply to our data-rich stock assessments, and these are
stock assessments which provide for an estimate of OFL based on
MSY or a proxy and also have the ability to create a probability
density function that, in some way, reflects our scientific
uncertainty.

In this case, MFMT is a function, and it’s basically that shape
that I showed you, where MFMT is BMSY at stock sizes above MSST
and declines to the origin below MSST, and so this is generic,
and we would have to adapt it if the recommendations that Doug
was talking about become a reality for this council, and this
mathematics would change somewhat, but this just says to
consider an ABC control rule where your MFMT is reduced when
your stock size is below the minimum stock size threshold.

Your OFL is the catch at MFMT, and so that is consistent with
our current ABC control rule understanding, and, in the case of
Tier 1, your ABC is determined from the PDF of OFL, and here is
where -- This is just another generic terminology. In this
case, it says where acceptable probability of overfishing is 40
percent.

Now, when we put together this documentation, it was our desire,
for the Caribbean Council at least, for the council to determine
the acceptable probability of overfishing, and we were
recommending about 40 percent as an acceptable number. It turns
out that, in most cases, councils are not willing to establish a
probability of overfishing, and they have asked the SSCs to
provide that sort of advice.

In actuality, ABC control rules vary by council, and so each
council has a very different ABC control rule, and most do
attempt, to various degrees, to set the ABCs below OPL in a way that reflects scientific uncertainty, but how they actually do it various by council considerably, and I am not going to go through all of what this says on this slide, but just to point out that the ABC control rules employed by different places look quite different, and they are all attempting to describe that buffer between scientific uncertainty in some rational way.

This is kind of our existing control rule, and I don’t know if I really need to go through it in any detail, and you’re probably all quite familiar with it, but, essentially, P* is based on a level of uncertainty that is generated by using a risk determination table, which was actually created by Joe Powers and I, and we would really like you to stop using it. We both don’t like it very much.

Essentially, that tiered control rule considers the level of assessment, whether it’s data rich, whether it can produce an FMSY estimate or relies on a proxy, and it depends on whether it’s a fully-integrated model, whether the scientific uncertainty is populated internally to the model or created through sensitivity runs, for example, and it talks about the severity of the retrospective pattern and the use of any known environmental covariates. Those are the axes of uncertainty that are included in our tiers and dimensions table.

In our control rule, OPL is the yield at MFMT, and ABC is the yield at P* percentile from a projection of MFMT or, for overfished stocks, F rebuild.

Tier 2 in our existing control rule, the Science Center has not found it useful. It has not been used to date, nor do we actually have any assessment methodology that we can propose that would fit into Tier 2, and so that’s our viewpoint, is that, currently, as written, it’s not particularly useful.

Tier 3 is our catch only tier, and so there is no assessment on Tier 3, but the stock is unlikely -- This is the language that we used way back when, and we have received some guidance since that suggests this language may be not particularly appropriate, but the way it had been written was that there is no assessment, but the stock is unlikely to suffer overfishing if future landings remain similar, and that would be Tier 3a. In that case, the OPL is the mean of the recent landings plus two standard deviations, and the ABC is the mean of recent landings plus one standard deviation, is the general practice.

Tier 3b is when you have no assessment, but the SSC feels the
stock is likely to suffer overfishing, and, in that case, the
OFL is the mean of the recent landings, and the ABC is buffered
downwards, and the default value, I believe is 75 percent,
although we have chosen different values at different times.

Points here are Tier 2 is where all of our data-limited stock
assessments would belong, but currently, as written, it doesn’t
function well, and so lots of details, but, in general, the ABC
control rule needs to read as if it’s this condition, do that.
Otherwise, do something else. That’s basically what an ABC
control rule is.

The calculation of both MSY and OFL depends on knowing or
assuming the nature of reproduction, growth, and natural
mortality, and so, in many cases, we have insufficient data to
give you reliable estimates of OFL, and so we require using a
proxy in those cases, and we’ve had a lot of discussion about
proxies. The Science Center’s basic position remains that the
range of proxies could be specified, the lower bound at that
global SPR calculation and the upper bound at the advice
provided by the Harford et al. paper. Alternatively, one could
even using a Bayesian prior for steepness and generating
that range from the stock assessment itself.

I think Rick showed you this, but definitions for MFMT vary
across the U.S., and so lots of different proxies are used, and
there are also differences in the application among councils,
and, if you want to just look at SPR references, the councils,
the various councils, use a variety, ranging from F 20 percent
all the way to F 50 percent, and we typically use mostly F 30 in
the Gulf of Mexico.

Now back to how we would better characterize the scientific
uncertainty, and so, moving past our tiers and dimensions table,
how would we better calculate that buffer between OFL and ABC?

One could try to estimate the variance of the PDF as part of the
assessment process, and one also could try to estimate the
variance external to the assessment process, and so, if you felt
that the PDF that comes out of the stock assessment was
unacceptably narrow, and that happens frequently in our
assessments, because of the number of fixed parameters we’re
using, and so we typically fix natural mortality.

We often fix retention functions, and we fix some elements of
selectivity patterns, et cetera, et cetera, and so we’re not
fully representing the known scientific uncertainty within the
stock assessment, and the PDFs that come out of the stock
assessment are often narrower than is desirable or than we believe quantifies scientific uncertainty.

You could estimate the variance external to the stock assessment process by borrowing it from another assessment or from computing it from comparisons of many past assessments, as Ralston et al. did, and I included, in the background documentation of this meeting, that Ralston document, or you could not try to even -- I just wanted to clarify that this means -- What was intended by this bullet point is you could not even try to estimate the buffer between OFL and ABC, and you could just set it to say F ABC equals 75 percent of the F MFMT, or FMSY or its proxy, and we have done that in certain cases here as well. You could just use a hardcore buffer.

What do we believe you should do with your ABC control rule? Tier 1 we believe should consider reducing fishing mortality, or MFMT, as the stock size declines in the ABC control rule, and we recommend that you have additional tiers that are made more flexible to accommodate assessments that are more data limited in nature.

We recommend actually two additional tiers, one for data-moderate assessments and one for data-limited assessments, where data-moderate assessments would have more uncertainty than data-rich, but less uncertainty than data-limited, if you know what I mean.

Bullet Point 3, that might be more of a personal opinion, but we, when we recommended this to the Caribbean Council, it was certainly our concept that the council should determine the acceptable probability of overfishing and that the SSC should focus on determining the magnitude of scientific uncertainty.

I should probably -- This is the strawman proposal that we walked in the door with for the Caribbean ABC control rule, and they did modify it somewhat, and I have not included those modifications. I have left this the original control rule that we proposed prior to the SSC’s changes, for the Caribbean SSC’s changes.

Tier 1 is a data-rich assessment tier, and we’ve essentially already gone over this tier, but the important points to highlight here is that your ABC buffer now, rather than using the tiers and dimensions table, you would essentially establish an acceptable -- You would establish, essentially, the sigma, the uncertainty, the scientific uncertainty, either from the assessment itself or from borrowing from the Ralston approach.
You would establish what you believe is the variance, the sigma, that you’re going to accept for this assessment.

CHAIRMAN POWERS: A clarification. That’s the reference C min, that there is some minimum acceptable standard and that everything is scaled to that.

DR. CALAY: Exactly. Thank you for clarifying, and so that’s kind of what this hinges on, is that you first establish what your minimum acceptable variation is in the shape of the PDF, the sigma.

This is the Ralston approach, and this is one of the figures from the Ralston approach, and it shows three tiers of stock assessments here, and, essentially, there is three levels of sigma, and the sigma on the top represents your data-rich assessments, and that sigma is 0.36, and so it shows you that the council, in this case, might determine the acceptable probability of overfishing, which is your X-axis, ranging from 50 percent all the way down, in this case, to 25, and then it shows you, at that sigma level, what would be the corresponding ratio between ABC and OFL.

You will see that, at 50 percent, OFL is always equal to ABC, no matter what your sigma is, but, as your probability of overfishing declines to 25 percent, in your data-rich condition, with a sigma of 0.36, your ABC is 80 percent of your OFL at a 25 percent risk of overfishing.

For Tier 2, your data-moderate tier, perhaps, that sigma is 0.72, and so, at a 25 percent probability of overfishing, your ABC is 60 percent of your OFL, and, for your data-limited tier, at a 25 percent overfishing, your ABC is 40 percent of OFL, and so that’s how this works. These were determined from looking at many, many realizations of their most common stock assessments, and these are kind of their general conclusions. Doug.

MR. GREGORY: The criticism I have heard frequently about the way we’ve been doing things, and it’s primarily Tier 1, is that ABC is only about 10 percent less than OFL, and the Ralston paper has been referred to a lot of times, but, if you look at the Ralston paper, and you look at 0.38 or 0.4 in the Tier 1 category, their ABC is only 10 percent less than OFL, and so it’s no different than what we’ve been doing, and so I don’t understand the criticism of what we’ve been doing, other than the other tiers. Their other tiers are much more conservative than our Tier 2 or Tier 3, but, as far as Tier 1 goes, it’s basically what we’re doing. It’s the same thing.
To try to get beyond this criticism of a 10 percent difference in ABC, what I want to start looking at is not that, which we don’t know what that really means, but look at, okay, let’s say OFL is 30 percent SPR, where MFMT is, and an ABC is 10 percent less than that, and what SPR is that? Is it 31 percent, or is it 35 percent?

That is when we will get some insight as to whether or not the buffer is too big or too little, and, in a rebuilding schedule, like with red snapper and some other fish, when are we projected to recover the population with an ABC, as opposed to the OFL, because, if we’re projected to recover the population four or five years sooner than we would with an OFL, that 10 percent buffer really has a significant impact, and I think we’ve been focusing on the wrong thing and criticizing the buffer itself, because it’s no different than what they use on the Pacific Council. Thank you.

CHAIRMAN POWERS: I think this is a really relevant discussion, but I want to finish the presentation first, before we get into all of this. I think some of the reticence on both Shannon and my part about this more relates to the other tiers as well, as you say, and it’s the inconsistency of how we’re interpreting uncertainty for different tiers, and I think what this is trying to do is, like I said, put it all on the same scale, but, if you don’t mind, Doug, can we go ahead with the presentation?

MR. GREGORY: Sorry. I’ve been chomping at the bit for months.

DR. CALAY: Well, I’m glad that the presentation is generating discussion, because that was the point. All right. This is probably an unnecessary level of detail, but this is essentially a North Pacific philosophy of a 40:10 control rule and how it would function, but let’s skip this for the time being.

CHAIRMAN POWERS: This one took me a little bit. Basically, the Y-axis is now actually in catch, rather than normally we look at it in terms of fishing mortality rate, and so it gets translated, but it’s essentially the same kind of thing.

DR. CALAY: Okay, and so data moderate, in your Tier 2 now for data moderate, this would be for stock assessments where at least two of three time series, either catch data, age, or size composition, and indices of abundance are deemed informative and useful, and that would be what we consider a data-moderate assessment, but only two of those three, and you can still provide estimates of MSST, MFMT, and a PDF on OFL, and so, in
these cases, for a Tier 2 assessment, where one of these three
types of data might be considered unreliable.

We would propose to use the same elements as the Tier 1, but now
we increase the variation of the PDF on OFL, and so, instead of
that sigma minimum that we established in Tier 1, we would
propose to use something greater, say 1.5 times sigma minimum,
because, in principle, there should be more uncertainty for a
data-moderate approach than for a data-rich approach, and,
currently, we don’t fully consider that in our tiers and
dimensions table.

Data-limited stock assessments, we would use this tier for
either relatively -- For out-of-date assessments, if we were
trying to use an out-of-date assessment to establish management
advice or for data-limited stock assessments, and, in this case,
you might have only one, either catch, size composition data, or
an index that you consider reliable, and the other two pieces of
information are data-limited or highly uncertain.

In this case, we would still be able to give you a definition
for MFMT, and it might be that the definition is that MFMT is
FMSY, or its proxy, and the MSST is unknown, and the OFL is
still your catch at MFMT, and, in this case, the ABC, we would
increase again that sigma, and we would propose to use something
like on the order of two-times your minimum sigma for OFL, and
an ABC would be a scalar that reduces OFL, and the scalar must
be less than 0.9, just as a generic rule. It could be
considerably less than 0.9, but it certainly shouldn’t be equal
to the OFL.

In Tier 4, this is basically -- There is a change here, and the
change is basically in standard deviations. I mean, we’re
basically saying the OFL is the median with two standard
deviations above the mean, and the problem with that is in
uncertain -- In highly-variable catch series, sometimes that two
standard deviations above is very, very high, and it’s a value
higher than we’ve ever observed.

In some of our preliminary analyses, using the 75th percentile
actually functions better than using two standard deviations
above the mean, and so it still gives you that buffer you’re
looking for, where your OFL is still higher than the mean
landings for Tier 4a, which is where you’re not concerned, and
you think the catches are sustainable and that you’re just
trying to prevent unnecessary management of that stock, and so
our recommendation here is to avoid using two standard
deviations above the mean, simply because it can produce some
outcomes that are far above any observed value.

However, in practice since, in the Caribbean, we have also noted that the 75th percentile can still do that to you, and so it may not be the panacea that we hoped for, and so that’s the change here. Other than that, basically, you’re still using catch only information for Tier 4. Our advice is just to avoid setting OFL higher than any observed historic landing in Tier 4a. That’s the main advice from this slide. That’s the end of that presentation, and so that’s kind of our strawman proposal and/or advice to the SSC about ways to improve the control rule.

CHAIRMAN POWERS: Thank you. Keeping in mind Doug’s comments, Will, you wanted to --

DR. PATTERSON: Thanks, Shannon, for running through the advice to the Caribbean, and I guess they have adopted some edited version of this, and we talked quite a bit about the Ralston et al. approach a couple of years after it was first published, and one of the things that we talked about is that it’s an attempt to try to come up with an objective way to set buffers, but it’s based on analysis of modeling error in west coast assessments, and, even in that paper, they acknowledge that process error and measurement error and other sources of error are not actually part of what they have captured in their sigma.

Instead, it’s an estimate of model error, and so, to borrow it, I think it would give us this patina of an objective approach of science to decrease the OFL to ABC based on this amorphous scientific uncertainty, but it’s not actually objective at all. It’s just as subjective as if we had created our estimate based on model error in Gulf assessments, and perhaps that would be more defensible, and there was some discussion about trying to do that.

We keep inventing ways to try to inject objectivity into this process that I think is inherently flawed, because we don’t have a true target, and we’ve talked about this before. You have a threshold that’s estimated in the OFL and then a buffer and a buffer, and so that gets us into this conundrum of data-poor stocks and plus or minus two standard deviations and where does that put us, and is that actually where we want to be? Is that helping us achieve OY?

Nobody really knows that, but, if we took a clearly objective approach, which I have advocated for in the past, of having OFL be the yield at MFMT or FMSY, and have a true target, an ACT, which is set at F 75 percent, or 75 percent of FMSY, and so
that’s the SFA model, but now, with the reauthorized act, there
is no true target mentioned, but ACT does come up in the
guidance, but the real strong suit of the revised act is the
accountability measures, which didn’t exist before.

You have ABC and ACL, which can be equal, and, in the approach
that I have advocated, if you have the OFL estimated from an
assessment or a catch series or something in between, a highly-
quantitative assessment versus just a catch series, then you can
have a sliding scale, based on what you view as scientific
uncertainty, and perhaps even regulatory or management
uncertainty.

If you have a very quantitative assessment, maybe you set the
ABC equal to ACL at the 75th percentile of that range, and so
let’s just say, in a given fishery, your estimate of the OFL is
a million pounds, and the 75 percent of FMSY applied to the same
biomass gets you 900,000 pounds, and so you have 100,000 pounds
difference between the two.

If you set the ABC equal to ACL at the 75th percentile, then that
would be a reduction of only 25,000 pounds from the OFL, and so,
if you felt really strong about the management process and the
assessment, then you would allow the fishery to catch up to that
level before accountability kicked in.

You would set your management in a given year so that you tried
to achieve the target, but if, for whatever reason, you had a
spike in landings in the recreational fishery, or something went
catawampus in the commercial fishery for a given stock, and you
ended up with higher catches, there wouldn’t be any payback
provisions, because you had a really quantitative assessment,
and you didn’t actually overfish, right, and we’re trying to
prevent overfishing, but you have a true target, and you set
that as the ACT.

Then, to get to the other extreme, if you had an OFL based on a
catch time series that you didn’t have much confidence in, then
maybe you take the 25th percentile of that range, and so you have
a bigger buffer between the OFL and where the ACL is, which is
where accountability kicks in, and so you keep yourself away
from the OFL, because you have less confidence about where that
actually is or your ability to constrain a fishery to that
level. It gets away from all of this subjectivity, which has
the feel of being an objective, scientific approach, but it’s
not really.

CHAIRMAN POWERS: Thank you. Luiz.
DR. BARBIERI: Thank you, Mr. Chairman. I understand Will’s points, and I think that this is a valid approach to deal with this. However, we have a system in place that has been established and all the councils have accepted, and so they have implemented it through primarily NS 1, and so that system is in place, and we are -- We have an ABC control rule, and we operate in the parameters of what is in I guess Slide Number 2 or 3 in her presentation.

We function along those things, and councils, I guess, would have the flexibility within that framework to utilize parts of that in whatever way they want to manage the stocks, but, in this case here, as the SSC, we haven’t received that guidance from our council explicitly, to say, no we want to function, right or wrong, advisable or not, but we haven’t received that guidance from our council, in terms of we’re going to be managing by ACT and then avoid having to explicitly establish any of these other metrics.

Within this, our ABC control rule is trying to address that we’re going to have to establish an OFL, and, from there, we’ll set up a way to come up with ABC.

If we go to Slide 25, I agree with Shannon’s points that modifying the way that we handle things so far -- I think that our ABC control rule is a little bit overcomplicated, and the issues of risk and uncertainty are somewhat conflated there, and it would be -- Her Point Number 3 there, I agree completely.

I was just looking, since Rick is in the room, I was just looking at a presentation that he gave at the 2nd National SSC Workshop, and this was back in 2009, and I sent that to some of you, and it was Slide 14 of how to deal with unmeasured uncertainty, and so, as we were working through it back then, the process of how we’re going to implement NS 1, and P* was one methodology that came forward that was promising, and it was something that we wanted to potentially implement, we already knew that there would be situations where we’re not going to be able to really measure all of the uncertainty and be able to express that in the way that we estimate ABC, or specify ABC.

In that slide, he recommends options if uncertainty is clearly underestimated. One, decrease P*, which is an option, but, in this case, it’s not necessarily the option we want to go with. Add proxy variants for the unmeasured component or add additional buffer, and so, to some extent, to me, this is somewhat similar to the Ralston et al. approach in Slide 27,
where they are adding sigma.

If the council sets up $P^*$ and determines that they feel comfortable with, in terms of probability of overfishing, and we adjust the PDF to be flatter or somewhat more representative of what we believe would be the level of uncertainty that would be more realistic, then it’s just a matter of applying that $P^*$ to that PDF and we come up with something.

I just wonder whether this somewhat simplistic approach, in a way, and I recognize the patina of objectivity, but it’s somewhat simplistic, but aren’t we sometimes kind of overcomplicating things? We come up with a PDF, and perhaps, if we feel that, for whatever reason, and Shannon brought up some criteria there for how we would look at the PDF and evaluate it, do we think that this is capturing all the uncertainty, or most, or a big portion of the uncertainty?

If not, we come up with some, and they make some recommendations there in that paper, some methodology for adding sigma to the distribution and go with that, and I think that that is simplistic, but it’s more transparent for what you’re doing, and you’re acknowledging that you can’t really capture all of the uncertainty, and you are having to add more, and it separates that confounding of $P^*$ and the PDF, in terms of risk of overfishing versus uncertainty, and I think it clarifies the process altogether, and that would be my recommendation, that we go with something similar to Ralston et al., if not --

CHAIRMAN POWERS: My interpretation, what I saw, in the strength of this sort of thing is basically to put things on a scale where, as a scientist, you kind of understand that the sigma goes up and the sigma goes down, but it can’t go down below C min, and, yes, that is sort of an arbitrary thing, and it’s based on, as you said, the west coast, but it’s setting a minimum.

I am not sure what Will suggested, because he did it verbally, and I like to see writing, but I’m not sure that you couldn’t translate that into exactly what Will suggested, or even what Doug said, that it ought to be characterized in terms of SPR, and I think it could be translated back into that.

I am not sure we’re really talking about different things here, but it’s just that this is, in my thinking about it -- One of the major criticisms was having tiers that resulted in expressions of uncertainty that were inconsistent with each other, but, again, let me open it up. Doug.
MR. GREGORY: I found this from the council, and the council has given us guidance, back in 2009, at least in the committee report to the council, and I assume it passed the council and came to us, and the Sustainable Fisheries Committee recommends, and I so move, to bracket the acceptable levels of risk that ABC exceeds true -- It shouldn’t say exceeds, but at 15 to 45 percent, and so we were given that range to work within, and I think that’s what the table is probably based on, the elegant table that Shannon and Joe developed that I wouldn’t want to discard completely.

The truth of the matter is that we’ve been dealing with this and going around in circles since the beginning, and the problem is the National Standard Guidelines. Having scientists make decisions based on what they don’t know, their uncertainty, is ludicrous, and that’s why we’re having so much difficulty with this.

The end result is -- Well, I don’t know what the end result is, but we don’t know what the uncertainty is, and there is no way to capture it. I mean, we all have worked on the ocean. The first principles are it’s extremely uncertain. Unless you’re doing it day in and day out, like commercial fishermen do, you don’t really get much insight into the dynamics of it all, and so we do the best we can, and, in the beginning, I thought that if we -- We usually do different scenarios for stock assessments.

If we had a way of combining and developing joint PDFs of those different scenarios, we would get the full range of the PDF, but apparently that’s too difficult to do, or it’s not as easy --

UNIDENTIFIED: It’s not easy, but it’s feasible.

MR. GREGORY: But we seem to have not been doing that lately, and part of it is our scenarios are just kind of guesses that border around the base model anyway, but I think we either punt and do something simpler, like was recommended in an earlier slide, or we get more sophisticated and more complicated and trying to get as much uncertainty built into our decision-making as possible, but, to me, it’s a fool’s errand.

I go back towards simplicity, and I think the 75 percent of FMSY or whatever is a good start, but, again, we don’t know what the impact of that is, and it certainly is not 25 percent difference in catch, and it depends on if you’re doing a static SPR or doing something more dynamic, but it is more straightforward,
and we’ve done it in the past.

We saw a table, with a previous discussion, where we’ve done it for five or six different species, but we refused to do it yesterday for other species, and so I would say, one, what we’ve got is working fairly well, I think as good as anybody’s, and, if we do change it, let’s try to simplify it, and, if we get more conservative with the other tiers, so be it, but it’s straightforward, and it’s all -- The Ralston process has a consistent foundation for all the tiers, where we’ve developed different foundations and different methodologies, but that’s my two-cents worth.

CHAIRMAN POWERS: Thank you. I have Will and then Lee.

DR. PATTERSON: Luiz mentioned that the simplistic approach that I advocated for is a departure from what this council has been doing with the SSC. However, it’s not that different than what the North Pacific does with the 40:10, and it’s just that, there, you have a sliding scale based on where you perceive the stock biomass to be.

I remember having a conversation with Rick, at one of the very first National SSC Meetings, when I was confused that these different regions seem to be interpreting this differently, and I said, well, how can that be? How can all of these be equally viable? He said, no, they are, and he explained to me how they all have the same general concept, but it’s just that, regionally, there were differences among fisheries and among cultures, and there was room for interpretation, and so I don’t think it’s impossible to do what I’m advocating.

The second thing is, with all of the P* approaches, we get -- We focus for a long time on the probability, where we are on the distribution, and that’s where all of our energy went, and then we figured out, well, if you have a very narrow distribution, it doesn’t really matter what P* is, because you’re not going to have that much of a buffer.

Now we’re trying to impose this, to broaden out the PDF, but, again, we’re borrowing information from another region that actually was computed with only a small portion, or maybe not a small portion, but only a portion of the uncertainty or the error that goes into the estimate of OFL.

Lastly, I just think this whole concept, as I’ve thought more about it, about P* and buffering from OFL, it goes against the principles of parsimony, because we’re focused on precision,
and, as you increase the parameters in a model, you tend to get
a more accurate estimate, but a less precise one, yet what we’re
suggesting here is the opposite.

We have 1,100 parameters in the red snapper model, and, because
we fix some very basic parameters, and we can come out with a
very narrow PDF, we then have to impose a distribution from
somewhere else in order to broaden it out, and that doesn’t seem
objective to me, and then, on the contrary, if we have an OFL
estimated just from landings, then we have a different buffer,
when it’s actually very precise. It may not be accurate, as a
reflection of OFL, but it doesn’t have much variance around it.
Anyway, it just seems, to me, contrary to parsimony.

DR. ANDERSON: First, I have a question, and, when I ask my
question, that isn’t the end, and I’m announcing it now, so you
don’t go on. I’m asking a question of the group, and I have
asked this question before, and I saw in the presentations, and
I heard about it, that we need the PDF of the OFL.

I have heard another, and I’ve asked this question, of do you
get a legitimate PDF of OFL out of stock assessments, and I
heard one thing of, well, because we don’t have much variability
in the thing, it comes out narrow, and I’ve heard other answers
that, no, we can’t even get a PDF of OFL, and it comes out as --
You get a point estimate, and so, in one way, we’re -- Are we
asking the impossible? Can we get a decent PDF of OFL? Then I
have more to say, but I would like to have somebody answer that.

DR. CALAY: I think, in all of the stock assessments that we
have developed, it is possible to generate a PDF on OFL.
Whether you believe that fully represents the scientific
uncertainty is debatable, because we use -- In most cases in the
Gulf stock assessments, some of the important leading parameters
are fixed.

If we actually put a prior on them and estimated, the PDF would
be broader, but the stock assessment might not converge, and so
there are reasons that we do it, but the PDFs that we’re
generating are likely to be narrower than the reality.

DR. ANDERSON: The P* mode of operation has a very weak link, in
that the PDFs may not be that strong, and now, if I may, Mr.
Chairman, I want to go a little further into this, and I have
mentioned this before. In fact, once, when we had our meeting
in Key West, I gave a full presentation on the benefits and
costs of this.
As an economist, I get a little worried that we talk about only
the costs, and we need to lower the risk of fishing, and so
we’re going to cut this back, but what are we giving up, and I
will say one thing, and that’s why I like this Ralston approach,
is that, when you’re making choices, you get some kind of notion
of the cost.

The thing is that ABC over OFL. If you just have that hockey
stick thing, and we’ve got the stock here, and then the
probability of overfishing, and you say which one looks good, or
let’s add -- Let’s double the uncertainty parameters in the
thing, and you don’t know what that -- Is that a good thing? It
sounds good, that we’re being more safe, but we don’t know what
we’re getting in return.

Somehow, I would like to see these discussions turn on what are
we giving up and what are we gaining. Doug, your point about
adding in the time to rebuild in there, that would be another
thing that we could look at. We could say, all right, we are
giving up 10 percent of our catch, or 40 percent of our catch,
but the expected time to rebuild is going down by a certain
amount, and at least we would have some kind of a tradeoff to
get into.

I know that I am kind of changing the tone of the argument, and
I hesitate to say it, but, within reason, I am willing to work
on a group to try to come up with something that we could
respond to this, but I think some kind of a hockey stick with
some notion of where you are looking at both what happens to the
probability of overfishing and you are comparing it with at
least something that has to do with what you’re possibly
gaining, either time to rebuild or a percent of the actual
harvest that you’re losing, and I think we can get a better feel
for it, and, more importantly, we can give the council a better
feel for what their choice -- They should make these choices
ahead of time, so that it’s not biased.

CHAIRMAN POWERS: Thank you. Bob.

MR. GILL: Thank you, Mr. Chairman. It seems to me that we, as
has been discussed, we have talked and talked about this
problem, and we’re not going to solve it right here, and so I
would propose that we reestablish the ABC Rule Working Group to
take where we are and come back with a proposal for where we
should go.

CHAIRMAN POWERS: Thank you. I assume that’s in the form of a
motion.
MR. GILL: I so move.

CHAIRMAN POWERS: Is there a second?

DR. ANDERSON: Second.

CHAIRMAN POWERS: Okay. Can you repeat that for Charlotte a little bit?

MR. GILL: That an ABC Rule Working Group be reconvened to evaluate the existing ABC control rule and propose improvements.

CHAIRMAN POWERS: Okay. Is there discussion? Again, in my opinion, what we’re grappling with here is different ways of expressing the same thing and that what Lee suggests is that you look at those hockey sticks and it doesn’t mean anything from evaluating costs and benefits and that sort of thing. I think it could, and so we have to be very careful about who we’re communicating with and what we’re trying to express.

To me, I look at the hockey sticks, and I know exactly where the flexibility is, or should be, and where the arguments ought to be, and Doug looked at it differently, and he wants to look at it in terms of you can translate those into SPRs and that sort of thing, and so there’s a tradeoff there, and so I would -- The reason I’m bringing this up is I think that a working group like this ought to think about who it is that you’re trying to communicate with and what’s the best way to do that communication.

DR. BARBIERI: What I was going to say is, as a beginning for this, I see two options already on the table. One is the suggestion that Will made, that we set ABC, in a way, actual ABC equal to ACT, and we have a bigger --

MR. GILL: That’s not what he said.

DR. BARBIERI: No? So can you explain what your proposal is, Will?

DR. PATTERSON: I think the problem is that we’re all trying to find different ways to grab air and feel good about it, because uncertainty is out here, and we can’t quite grasp how to do it, and everybody feels differently about it, and I think the issue here is that there’s no true target.

What my approach does is say, okay, OFL is the threshold, and
the ACT is the targets, the annualized realization of OY, given no other objective way to establish what OY is, and we say that’s the annualized realization of OY, and so that’s our target. It gives you something to actually achieve.

You want to stay away from overfishing, and you want the stock to be above BMSY, and so you reduce the effect of the natural fluctuations, the process error in the environment, and you leave the stock in a less vulnerable condition.

Then, to buffer away from OFL, you base that upon scientific and management uncertainty that are coupled, and so, if you have a heavily-regulated fishery for which you have really great catch data, and you know a lot of information, and you have a very quantitative assessment that you feel is relatively unbiased, then you have a lower buffer.

If you are basing your OFL and ACT based on just a catch time series, then maybe you have a wider buffer that’s closer to the ACT that says, if you go across the ACT a little bit, then there’s accountability. That way, it actually gives you a target, something to achieve.

One thing we have never done is — In the amendment that we went through yesterday, the council has OY definitions on the books from SFA for a lot of these stocks, and that’s where the 75 percent MSY and the yield at 75 percent MSY came from, and so there is an OY definition, and we’ve never actually looked to see, given all of our buffering to avoid overfishing, how well did we approach the OY.

We know the stock, because we’re not overfishing, that the stock biomass trajectories should be heading above BMSY, but we don’t know how close they are getting to BOY, or whether they would ever get there, but, in this approach, we would have a true target, and we don’t have to grasp for this hard to quantify or estimate uncertainty, which by its very nature is amorphous, but, instead, we have a true target, and then we allow the uncertainty to be in between two defined parameters.

CHAIRMAN POWERS: Thank you. Were this motion to pass, I would ask for volunteers and give a few days to volunteer, and, after that, I will make assignments. Bob.

MR. GILL: To that point, Mr. Chairman, I would recommend that we request the council provide a representative to be on that working group, since, ultimately, this is their control rule, and being involved in that process, albeit it might be torture
for whoever that representative is, but it would be helpful, in
terms of that communication as to their view of the impact of
what we might be considering.

CHAIRMAN POWERS: Yes. Thank you. That’s a good idea, and,
also, we would need a NMFS representative, Shannon. Doug, go
ahead.

MR. GREGORY: I would just point out that, the last time we did
this, the full SSC changed everything that the working group
presented, every time, and so I don’t know how to get out of
that conundrum, but it just didn’t work, and we ended up having
multiple meetings and rehashing everything, just like we do
here.

CHAIRMAN POWERS: My expectation is that the working group will
be the people that are most vocal today, and, secondly, I would
also presume that the functioning of this working group would be
by communication email, et cetera, not having individual
meetings, unless we’re more developed in terms of that sort of
thing, and it’s unlikely, at this point, to have a separate
meeting, and is that sort of your interpretation?

DR. ANDERSON: I would like to have it not be ruled out, but, in
general, yes, webinars and things like that.

CHAIRMAN POWERS: Okay. This isn’t part of the motion or
anything, but I was just thinking operationally and
recommendations for that. Doug.

MR. GREGORY: I understand where Will is coming from, because,
when the 2006 reauthorization occurred, and OY was emphasized as
the thing to do, part of that was because the Gulf Council,
prior to 1996, always interpreted OY as to be more fishing than
MSY, and the way they looked at it was, well, the social and
economic ramifications of reducing catches are so great on the
fishermen that we won’t reduce the catches so much, and so it’s
just the opposite of the professional definition of OY.

I think that was part of the reason for the 1996, and I
remember, as one of the stock assessment chairs, coming to the
council and saying, listen, guys, you had better listen up, and
we’re not talking about MSY anymore, and we’re talking about
going more conservative than MSY, but NMFS never really enforced
that.

When the 2006 reauthorization came up, I was just going, great,
they’re going to fix the 1996, and they’re going to make ABC
equal to OY, and that’s going to come from the scientists, and so the council cannot exceed that, and so not only did they change the whole interpretation of the Gulf Council’s idea of what OY was, but, in my mind, it was going to make OY more conservative than MSY, and that would be ABC, but, low and behold, no, that didn’t happen. We got ACTs and ACLs and all this other stuff, and OY is still out there hanging in limbo.

If we can get back to what Will -- Will and I and our interpretations, if we can get to that, that would be great, and I would just say that maybe OY should be ABC and not ACT, but we can discuss that later.

CHAIRMAN POWERS: Thank you. Carrie, some final guidance?

EXECUTIVE DIRECTOR SIMMONS: Thank you, Mr. Chairman. I was just going to mention that I think this has to be an open public meeting, and we’ll have to notice it in the FRN and all those kinds of things, and so it can be via webinar, but it’s not going to be like an IPT, where it’s just emails or something like that. It would have to be an open public meeting.

CHAIRMAN POWERS: The question here was why?

EXECUTIVE DIRECTOR SIMMONS: You’ve got council members involved, and you’ve got SSC members involved, and it will have to be an open public meeting.

CHAIRMAN POWERS: Does that include general emails and that sort of thing?

EXECUTIVE DIRECTOR SIMMONS: I am not a lawyer, but this is not just staff, and so I suspect it’s going to have to be -- Ryan thinks differently, but I think this is -- If you get a council member involved, and we’re paying for stipends, potentially, for the SSC members that are involved in this, it’s going to have an open public meeting.

MR. RINDONE: If email -- I am just thinking about how SEDAR operates, and I am not trying to argue. If anything, it’s for clarification. Like how we’re doing some of the interim stuff and some of the portions of the operational assessments, where emails can be exchanged at will between participating members, but, ultimately, any decision that’s made on the subject material is still made in an open, publicly-noticed forum, like a webinar, and so they may be able to prepare materials and what things need to be decided via email communications, but nothing is finalized via email. It’s still all openly discussed and
subject to change at that publicly-noticed webinar, and would that be satisfactory?

CHAIRMAN POWERS: At this point, I think let’s leave that to discuss later, and it’s an issue, but we’re not really prepared, as an SSC anyway, to say yea or nay. The principle we’re trying to get across here is that we want to have this working group that puts together some materials that the SSC can consider, and that’s more or less it. Carrie and then Doug.

EXECUTIVE DIRECTOR SIMMONS: I think it’s a good idea. I think we just work out the logistics and make sure we’re doing the right thing. Thank you.

DR. ANDERSON: If I can say one other thing. Not only council members, but I think we should have staff, like Ryan or John or somebody, there, so that --They know how this stuff is implemented, and it would be better if we had them onboard.

CHAIRMAN POWERS: All right. If there are no other comments -- Doug.

MR. GREGORY: If you look at Slide 24 of what Shannon presented, there is the recommendation that Will has been talking about, F of ABC equals 0.75 MFMT. That is a suggestion that, if we don’t like the complicating factor of PDFs and trying to combine joint PDFs, that’s another approach for us to take, and so it’s on the table.

CHAIRMAN POWERS: This is the details that the working group should deal with, and I guess people are advocating positions that I think ought to be dealt with in this working group. Will.

DR. PATTERSON: Just a quick statement here. That’s actually not what I am advocating. The ACT would be set at that level and not the ABC. The ABC and ACL would be in between the OFL and ACT. That is what I am advocating.

CHAIRMAN POWERS: All right. The motion that was on the table is to basically create this working group, with the idea of putting together information that would be useful to the SSC to consider at subsequent meetings. Lee.

DR. ANDERSON: Ken just whispered in my ear that it would be important -- What kind of time period are we working on this, to make it relevant?
CHAIRMAN POWERS:  Our next meeting is in September, and I find that probably unrealistic to get much ahead of that.

DR. ANDERSON:  Maybe at the September meeting the committee members could come in a day early or two, and it won’t cost any more airfare.

CHAIRMAN POWERS:  I am going to leave all that to the committee themselves, in terms of how that gets operationally developed, and it’s like the Constitution saying that Congress can develop their own rules, basically.  We’ll leave it at that, but you’ve heard some guidance here, and there is operational issues that have to be concerned between Ryan and from the staff level and Shannon from the NMFS level and the council level, and all these things have to be considered, but I would -- Luiz would report this as kind of a way of moving forward to the meeting two weeks from now.  With that, are there any objections to this motion? None.  Jason and Harry, you’ve got ten seconds to object.  The motion carries.

All right.  It’s incumbent on me, I think, working with Ryan, to kind of send out an email of sort of the ground rules.  I have already noted where the interest lies, and so the expectation is that participation of those that have a great interest, but, if you also want to participate, do let me know, so that I can make sure that you’re on the distribution list.  Thank you.  All right.  This completes this agenda item, and now is the time for a break, and so let’s break for fifteen minutes.

(Whereupon, a brief recess was taken.)

CHAIRMAN POWERS:  Luiz will add to the discussion after the presentation, and so Dr. Cody.  Thank you, Dr. Cody.

REVIEW MRIP AND STATE SURVEY DATA COLLECTION AND CALIBRATION EFFORTS

DR. RICHARD CODY:  Thank you for inviting me here to give you an update on MRIP activities.  What I am trying to do is just briefly outline some of the stuff that we’re dealing with right now and some of the activities that we have been involved in over the past year or so and continue to be.

What I thought I would do is briefly outline some of the things that are going on with MRIP estimation, for instance, the Gulf supplemental surveys, which is of interest to this group, a fishing effort survey and some of the studies that we’ve been working on, and also our involvement with the Modern Fish Act,
electronic reporting, the National For-Hire Workshop, of which
Luiz was the chair, and that occurred fairly recently here in
St. Pete, and then some of the work that we’ve been doing on
rare-event species, which might be of interest also to this
group.

The first item really related to MRIP estimation is there are
two workshops that we have been asked to participate in, the
second of which is the Gulf Reef Fish Survey workshop, and this
resulted from some interactions that we had with Florida Fish
and Wildlife Commission on the disparity, really, between the
estimates coming out of the Gulf Reef Fish Survey and the FES.

I wanted to take a deeper dive into those differences and look
at some of the factors that affect that, and one thing, for
instance, right now that we are working on with the agency is to
look at, even though these are two mail-based surveys, how they
account for off-frame effort is very different, and so we’re
looking at ways that we can modify the APAIS questionnaire to
reflect how the GRFS collects information, and vice versa, and
so those are some of the things we’ve been looking at.

I think, for the GRFS workshop, it’s probably safe to assume
that the workshop will probably result in follow-up studies and
pilot studies to look at the differences there.

The South Atlantic Council SSC workshop is coming up in August,
and this will be really to provide a little bit more background
information on the calibration models used for both the APAIS
and the FES, but concentrating on the FES, mostly, because the
FES really accounts for most of the differences that we see
between the old CHTS, the Coastal Household Telephone Survey
based estimates and what we have now.

The council wanted more, I guess, guidance on how to interpret
trend information as it relates to the calibrations, and so
we’ll be taking a deep dive into a number of species, including
king mackerel, greater amberjack, red porgy, golden tilefish,
and maybe one more there as well, and so that’s where that is
going.

This is some more information on that workshop, and the council
released a set of terms of reference for the workshop, and so
what I’ve done here is tried to summarize those here, and there
are two main terms of reference that they referred to, and the
first is a review and description of the differences between the
Coastal Household Survey and the Fishing Effort Survey
estimates, and they want us to take a look at outliers and their
impact on catch estimates and also the impact of the calibrations on the generation or the accentuation of possible outliers in the estimates.

We’ll also look at the impact of the Southeast Fisheries Science Center post-survey processing of weight information as well, and that’s something that we won’t be directly providing any input on, but that’s part of the terms of reference.

Examining factors likely to explain some of the differences between the Coastal Household Telephone Survey and the FES estimates is one of the main components of that first term of reference, and then, as far as the second term, establishing approaches for use of the FES estimates, really as they pertain to ABC values and comparing the revised estimates to the previous estimates and seeing if the ABC control rules are adequate.

Integration and calibration of Gulf survey estimates of red snapper catch, the Gulf surveys, we had a workshop last September in St. Petersburg to look at ways to integrate and calibrate the surveys into MRIP, and so, out of that workshop, basically we came up with a couple of homework assignments for statistical consultants, and those were really to look at composite estimation as a way to integrate the different estimates from the different surveys, including the MRIP estimates as well.

What they did was they took information that was provided by the states and looked at ways, with the hope that we could use composite estimation as a way to automate a process for generating a Gulf-wide estimate, and that didn’t transpire, and there were some things that concerned the consultants about the behavior of the estimates, and so they are continuing to look at that and look at different ways that they can best integrate the estimates to come up with a Gulf-wide estimate, and so that work is continuing, and I don’t have much to report there. We expect some more information possibly towards the end of this year on that.

Right now, the consultants are mostly concerned with developing calibrations for the state surveys, and so the decision was made, really, that we needed something in place by the end of this year, and we would look at simple ratio-based calibrations as the first step anyway, and we could look at more sophisticated model-based approaches going forward, and so that work is being done right now.
We had a call with Westat, which is the company that Jean Opsomer, who had been involved with the APAIS and FES calibrations now works for, and so they have a statistician right now that’s working on it full time, and so we expect to have some results of those calibrations possibly by the end of September, and then hopefully finishing them up by the end of the year.

The need for more sophisticated calibrations, we’re going to continue to look at that, but I think that it has to be kind of understood that that may not be necessary, but I think that we’re in pretty good hands, as far as getting a good handle on that, because of Jean Opsomer’s involvement with the process.

The Fishing Effort Survey, obviously, that’s probably our most controversial thing right now, and there are a number of different things going on with that, and I have listed two here, but there is another that I’ll refer to as well.

The first is a push-to-web design pilot study, and so this was started in the fall of 2018, and it’s finishing up right now, and they are working on the results of that, and so what it did was it examined three different response options for the FES, and you had your traditional paper option that is currently in use, and then you had a mix of paper with a push-to-web component, and so some of the respondents that received paper surveys will be asked if they want to complete the survey online, rather than doing a paper survey.

They will be comparing the results of those, to see if there’s any differences between the estimates based on the mode for responding. Then, also, there’s a web-only response, and, obviously, we had to do it this way, because the web-only -- Normally, there are some rules put in place to control what responses are made or to control for error in the responses and duplicate responses, multiple responses, and this type of thing, and we felt like, for a comparison of the paper and the web option, we needed to look at a web design that was as close as possible to the paper option as well, so that we had a valid comparison, and so that’s what is going on with that.

There is a non-response bias study that’s being developed right now with the help of Westat and Mike Brick, who had been involved with the development of the FES survey early on and in the initial pilot studies that were used to develop the survey, and they’re coming up with the design for that, and this is the second non-response follow-up.
The first, as I said, was done as part of a pilot study, and so what it does is it looks at responses from initial respondents, and then it tries to coax the non-respondents into responding, and so you get an increased response rate, and then you can compare the two and see if the answers are different, and it’s a standard sort of method for looking at non-response.

It does require a periodic evaluation, and so we think that coming up with a design that we can implement sometime in 2020 is a reasonable approach, and then those will probably follow at periods thereafter, depending on the results of that study.

The last one that’s not on here, and I apologize for that, is a questionnaire-type design pilot study that we’re looking at. One of the concerns with the FES is that the shore estimates are extremely high, way higher than they were with the old Coastal Household Telephone Survey, and so we’re looking at how the question is asked on the survey.

Right now, shore-related fishing questions are asked before private boat questions are asked, and so what we’ll do is we’ll change the order of those, to see if there is any differences in the response rates or in the responses from the respondents with respect to their fishing activity.

The Modern Fish Act, we’re in the process right now of finalizing a statement of work for the National Academy to conduct another review, and this review will look at MRIP compatibility with in-season management of annual catch limits, and so that’s being finalized right now, and there is a chance that that may come online in late September, around that time of the year, and it’s expected that the National Academy will use a format similar to the one that Luiz co-chaired back in 2017 for MRIP, in which there will be a regional component to it, with regional meetings and regional input as to the question of the adequacy of MRIP when it comes to in-season management. We would expect that probably to get started sometime late this fall.

There are a number of other requirements from the Modern Fish Act, and they are listed here, and I listed the different sections here, and the act itself is not very long, and so you can kind of pull those out and look at them, but the three at the bottom refer specifically to MRIP and then also to reports that Sustainable Fisheries will have the lead on, and Rick is involved in development of one of those reports.

The first one, greater incorporation of data from states and
NGOs and other sources, the Sustainable Fisheries has the lead on that, and there is also a reporting requirement to look at state partnerships and to develop best practices for implementation of the state programs, and so we’re looking at that as an opportunity to describe the process that’s in place with the FINs and ACCSP as the mode for the partnership, and probably extending that.

The last one has to do with implementation of the 2017 recommendations, and, as you all know, the National Academy has made a number of different recommendations based on their review, their 2017 review, to MRIP, and so MRIP, right now, has a response framework in place, and it is part of the annual implementation plans that we have to account for those recommendations in there. What this report will do is probably revisit that framework and determine if it’s adequate to address those recommendations and also the expectations of Congress and leadership.

Electronic reporting, there are two things that I wanted to report on here. There is a national for-hire workshop, and, again, Luiz is involved with that, chairing that, and then also some of the work that has been done on electronic reporting, and I will direct your attention to a number of different reports.

There is the Westat report, and that’s done by Mike Brick, and that’s his summary of the state of the art as it pertains to opt-in reporting, and it’s his assessment of its suitability for providing population-level estimates, and so that’s out there, and that’s actually online right now, on the MRIP website, and then we have two other reports that we are involved in, and one was with FWC, with Rob Ahrens from the University of Florida, and that’s for an iAngler study, and then there’s an iSnapper study as well, with Greg Stunz’s group, as well, and so those reports are out there.

There is a fourth report that is due, and it’s under review right now from NOAA, and this might be a way to summarize or a way for you to get a summary of what’s in those three reports, since they are fairly extensive, but what this is does is it’s an internal report done by the research evaluation team for NOAA Fisheries, MRIP, and what it does is it looks at those three reports and sort of tries to summarize the findings of those reports as they pertain to estimation, or what we can expect from opt-in reporting.

Then another thing I will direct your attention to is our work with the South Atlantic Council on their MyFishCount program.
Right now, we have provided funding for an additional year for MyFishCount, and the focus, initial focus, for us is on improving angler participation in that program.

As I mentioned, related to electronic reporting is the national for-hire workshop, and this occurred earlier this month in St. Pete, and it was co-sponsored by NOAA Fisheries and by ACCSP, the Atlantic Coastal Cooperative Statistics Program, and there were participants from, on a national level, the Gulf, Atlantic, and Pacific coasts. There was heavy participation, obviously, from the Southeast Regional Office, and Jessica Stephen and others were there.

It looked at methods and standards for accounting for the entire catch, using electronic reporting and other methods, and also discussed at the workshop was a need for probability-based sampling in conjunction with mandatory reporting. Obviously, those needs are modified depending on what is in place for different logbook reporting systems, whether VMS is in place and whether you want verification of catch or effort or both, and a report from that workshop is expected sometime towards the end of this year, and it’s in development right now.

Just some of the take-home things we got from the for-hire workshop is there was a recognition that a benchmarking period would result in duplicate reporting, which is something we want to avoid in the long term, but it is really unavoidable for a transition period or a benchmarking period if we are to produce some kind of a calibration that would allow a transition between the different methods.

There was also an acknowledgement that there needed to be consideration for a mix of different methods to cover state and federal vessels, and so, even though electronic reporting is becoming mandatory in the Gulf and the South Atlantic for federally-permitted boats, that doesn’t mean that the states are necessarily onboard or in a position to implement electronic reporting for the state boats. One of the things that was discussed there was evaluating the for-hire survey and getting it certified, and it’s not certified at this time.

For logbook reporting also, the need for probability-based sampling to correct for offering effort and reporting error was also discussed, and so the idea that an electronic reporting system would result in a number and not an estimate is something I think that is an expectation, at least with some members of the industry, and so that’s something that will be a consideration in transitioning to electronic reporting.
Then, also, heavily discussed at the meeting was the capture-recapture methodology developed by MRIP consultants, and what became obvious is that there is more than one way to come up with an estimate, a valid estimate, based on the methodology and based on small-area estimation approaches and the domains used.

This is something that has come up, and so there will have to be decisions made on picking an estimate, and probably sticking with it, or an estimator and sticking with it, and so that’s something that did concern some of the participants and that there would be a messaging challenge with that and then with the idea that we’re still dealing with estimates, no matter what way you slice it, and that might be a challenge.

Rare-event species, we established a working group for this, and it has participation from the Northeast Fisheries Science Center and the Southeast Fisheries Science Center and also from the Regional Offices, and Mike Larkin and Jack McGovern participate on it, and so we established this with the idea of looking at ways to improve estimates for rare-event species.

Rare events, obviously, it depends on how you define it, but so what we’ve decided to do is basically look at a suite of species from the Northeast and the Southeast, a small suite that represents sort of a range of different levels of rarity, going from something like blueline tilefish and snowy grouper up to king mackerel, where we’re dealing with possibly mode-level estimates that are imprecise at certain times of the year or certain occasions and to common species as well.

That work is ongoing right now, and, again, Westat statisticians are involved with that, and, mainly, that’s, again, because of John Opsomer’s involvement with looking at small-area estimation methods, and so what we’ve identified are a number of different approaches that we can use to evaluate rare-event species.

There is the idea of alternative unbiased estimators using small-area estimation, and so that would be borrowing strength from different cells to improve the precision of estimates and also looking at multiyear averaging or smoothing, more model-based approaches that would look at averaging over a number of years, three or five or more, in some cases, to come up with another approach.

Then a hybrid method, which would be a mix of the small-area estimation and modeling approaches, and what we tried to keep in mind is the sensitivities of ACL management and their
requirements for developing so-called alternate estimation methods, and so we expect -- We have a meeting with the consultants on this towards the end of September, and we expect at least an update on the progress of that, but the idea is that, towards the end of this year, we would have some methods available that could be looked at. Basically, that’s what I have from MRIP.

CHAIRMAN POWERS: Thank you. Luiz, you have the floor.

DR. BARBIERI: I don’t have much to add. I think that Richard’s presentation was very thorough. I guess, as a matter, looking at our scope of work, it’s really not an action item for us to address, and there is no expected action from the committee, and it’s really just an informational type of report from the agency regarding where we are on some of these issues.

I think some of the questions that might come up from members regarding the inclusion of some of the so-called state surveys, the surveys for red snapper in the Gulf, into stock assessments and how those things align, were the issues that Richard brought up here, but I don’t see any additional points beyond that, Mr. Chairman.


DR. FROESCHKE: Just real briefly, one of the things that we talk about in the office every week, as these stock assessments come through, and there’s just ambiguity, as far as input units and output units and what the quotas will be monitored in and how we communicate this to the public, when numbers might seem very different, and then there’s the allocation issues, and I understand that all of these issues are being worked on.

I guess I’m just uncertain, as these stock assessments -- We’ll have a red grouper assessment that you’ll be reviewing next, and there is more coming along, and how are we going to operationalize this before we get clear guidance?

DR. BARBIERI: John, I don’t have an answer for that, of course, and that’s something that needs to be discussed, but just one other item is that the SEDAR Steering Committee will have a meeting coming up on August 26, and that will be a webinar, to be discussing what is called the white paper that basically tries to outline parameters for all of those points that John just brought up and how are we going to be handling, during the time that these surveys are being calibrated.
I guess all the Gulf surveys, the state surveys, have been certified by MRIP right now, but there is a need to calibrate them, and then how the integration of those might be happening with MRIP. During all of this transition, there will be some guidelines in this white paper where the Science Center is going to have some direction on what’s going to be included in assessments and then some guidance on management units and the like, and so that’s something that there is going to be discussion after that webinar.

**DR. CODY:** That white paper is undergoing the approval process right now for release, but it’s expected to be included with the SEDAR Steering Committee briefing materials, and so probably towards the middle of the month.

**CHAIRMAN POWERS:** Thank you. Ken.

**DR. ROBERTS:** Thank you, Mr. Chairman. The question I have is the Modern Fish Act implores you, in Section 102, to incorporate data from NGOs, and I am wondering if you could just comment on the quality and quantity aspects of trying to incorporate that into a system that has been rigorously reviewed over the years if you could, please. Thank you.

**DR. CODY:** I can talk a little bit about the MRIP certification process. I mean, obviously, there’s a process in place with the SSCs to review, and I’m sure SEDAR as well, different sources of data, but MRIP certification is rigorous, in that it looks at survey design and things like that, but it pertains largely to producing estimates, population-level estimates and alternative estimates, to be considered.

I don’t think it’s considered a requirement for consideration as BSIA, but, if you go the route of being certified or seeking certification, obviously, it provides a level of rigor that may bolster the chances of it being considered.

**CHAIRMAN POWERS:** Any other comments? Thank you very much. That was helpful. We’re moving on to Agenda Item IX, the Gray Triggerfish SEDAR Progress.

**DISCUSSION OF SEDAR 62: GRAY TRIGGERFISH PROGRESS**

**MR. RINDONE:** Thank you, Mr. Chair. That’s just a discussion item. I don’t know if Jeff or Shannon wants to briefly touch on that.

**DR. ISLEY:** Just an update on what’s going on with the gray
triggerfish assessment is, during the data and assessment workshop, some work by Shervette and Dean identified a bias in the ages derived from spines based on otoliths, and, as a result, it threw a monkey-wrench into the age-based assessment that we had previously done using spines, and so we’ve switched to a length-based assessment, and we have incorporated age data provided by Will Patterson and his lab, where we have developed a growth curve from the otoliths and are using that in the length-based method.

We currently have a model, and it’s a working model, and it’s functional. It’s not just a base model, and we still have a lot of testing and tuning to do, but we’re making a lot of progress, considering we had to start from scratch, and so I will take any questions about it at this point.

CHAIRMAN POWERS: No questions? Shannon.

DR. CALAY: I think that some concerns have come up regarding whether this assessment will be delivered on time, and it is still our intention to meet that deadline, and we are somewhat behind schedule, due to the introduction of new data at the data/assessment workshop and the delay required to actually obtain that data from Will, and thank you, and so we -- At the moment, we have not requested a delay, but, if we did, we would be talking about delaying by one SSC meeting, and so roughly one quarter, but we’re still striving to meet the deadlines at this time, and we’ll notify you if we need to ask for a delay.

CHAIRMAN POWERS: Thank you. No other comments? Then Item X is research and monitoring priorities, and this is Ryan and John Mareska.

DISCUSSION OF COUNCIL RESEARCH AND MONITORING PRIORITIES FOR 2020-2024

MR. RINDONE: Thank you, Mr. Chair. I’m going to move to the back and work on the Word document with you guys up on the screen on this, in case you have any edits. John, if you want to start talking about it.

MR. MARESKA: Sure. I guess the last time we looked at this was in 2014, and that document was substantially different than what was produced for the final priorities, and so, just as trying to help us go through this document, because it’s exciting, and it’s gotten longer, and so I’ve gone through -- If you can scroll a little bit, I have just tried to highlight what has actually changed between the versions, just to kind of inform us
a little bit.

There is four different sections in here, and the first section is about the multipurpose research and monitoring programs, and the second part is basically just about fish biology, and the third part is about social and economic considerations, and the fourth part is about ecosystem considerations.

Each one of these sections has different priority codes, A through C, for most of them, and Section 2 has A through D, and ecosystem only has A through C, and so I think that’s an oversight. I think there’s supposed to be a range there, and so I’m sure you guys have thought about this a lot and all the things that we’ve talked about over the past day-and-a-half about reference points and species ID problems and OY, and I guess we’re looking forward to some suggestions to improve this list.

Something that I have kind of looked at is just the priority codes, where a lot of things remain an A, and they’ve been that way I guess for ten years now, since these are five-year lists and stuff, and so things aren’t changing, and I am not sure what needs to happen, and so, at this point, we’ll just start scrolling through, and, if anybody has comments about any section, please speak up.

MR. RINDONE: Just for further clarification, a lot of these -- Like John said, these are the same as they were for the last cycle, and we have added more than we’ve taken away, and you will see some comments off to the side, and those are staff notes from where we’ve gone through and looked at some of these things, ahead of this meeting.

For instance, right here, under fishery-dependent monitoring and sampling, develop and implement an effective and efficient electronic data reporting system for the recreational components of the fishing community, specifically the charter/for-hire vessels, and so an electronic reporting system has been developed, and it is not completely and uniformly implemented yet, but, as Ava noted, we do not have the same in place for private anglers, and so that’s just clarifying the status of that particular item for you guys.

MR. MARESKA: Item e right there, estimation of discards, the last couple of sentences there is a change, and so the better information, and that is a change in the document from the last version.
MR. RINDONE: This is a broader SEDAR recommendation that we see a lot, and this relates directly to the amount of observer coverage that is available compared to the commercial fleets, which have much broader observer coverage, by comparison. Of course, we don’t have any observer coverage for the private recreational sector. All the information on discards in that particular situation is angler-reported. Shannon.

DR. CALAY: I just wanted to make sure that the group is aware that we are frequently asked to produce estimates of discards in weight, and discards are self-reported and not observed by the port samplers, and so we do rely on information that we get from observer programs, for example, and so I support this recommendation. It would be a critical improvement to stock assessments to have better information about the size frequency of the discards.

MR. RINDONE: Benny.

DR. GALLAWAY: I would like to point out that all the discard information that I’ve seen is from recall at the end of a trip or later, and we have done some studies where we’ve put observers on boats informally and measuring discards and then having the captain independently report the discards from recall later, and they do not agree, and I would suggest that, sooner or later, we’re going to have to realize that, if we want good information, we’re going to have to spend the money on observers and get people in the field making correct observations. This recall stuff is just not going to cut it if we’re serious about getting -- That’s a huge component of mortality on the assessments, and we should focus on getting better information.

MR. MARESKA: Go ahead, Kari.

DR. MACLAUCHLIN-BUCK: Under the bycatch one, and you do have a line about practical methods for minimizing bycatch, and the other side of that, especially for the private rec, is getting them onboard with best practices and descending devices and all these things to reduce their discard mortality, and then is there -- Maybe it’s in here somewhere else, but is there another component of how you evaluate if those are working, because I feel like, when interacting with the angling community, a lot of them are onboard with it, and it will be a process to get everybody onboard and that just be a part of what everybody does, but then they also always want to know how are we going to evaluate if these practices are reducing discard mortality and how do we get that incorporated back in there, and I feel like evaluation of those types of practices should also be included
as -- I don’t know how you do that, but I feel like it’s really
important to figure out how to evaluate those, the effects.

MR. MARESKA: I am looking at Item g, which is a little bit
further down, that talks about discard mortality changes, and I
don’t think your concern is actually addressed in here, if you
want to read over that real quick.

DR. MACLAUCHLIN-BUCK: I feel like this is -- Yes, that captures
it, but maybe it should be a higher priority, and that’s just my
recommendation.

MR. MARESKA: All right. Let’s see, and so I think, to improve
Item e, the estimation of discards, I think we need to be
specific there and indicate that we need the length information
for the discards.

I guess we can move along to the ecosystem-based management, and
so this is specifically just to the data collection needs for
the ecosystem models, and so the ecosystem models are a separate
part right there, and the only thing that is new under the
ecosystem data needs is under Item b, the ecological
relationships, and it’s the third bullet down, the understanding
of the predator-prey and competitive interactions for the
ecosystem-based management. Just to note that the priority
codes for these items are B, but, for the model development,
it’s a C.

DR. CHAGARIS: About the priority code, and, obviously, I chimed
in because it was about ecosystem models, but I see some other
places in here where the tool is getting a lower priority code
than maybe the research question, and so, if you had a high
priority for estimating red tide mortality, maybe that would get
a priority code of A for some species, but then you have an
ecosystem model that has a priority code of C, whereas the
modeling may be the only way to get at population-wide estimates
of mortality.

The same could be said for further down, and we’ll get to
eventually, for like a large-scale mark-recapture program, and
it has a low priority, but, if it was reframed to say what if
you could get independent estimates of exploitation, or even
stock size, and that was a high priority, then maybe the large-
scale tagging program would have a higher priority. I see in
the document where there is cases where the tool gets a lower
priority, and it’s not reflective of the priority stated for
each research question, and does that make sense?
MR. RINDONE: A lot of these priority codes are holdovers from the last time, and so you guys can, obviously, recommend that they be changed.

DR. CHAGARIS: Then, specific to the section that we’re on now, I’m glad to see that the predator-prey interactions are in there, and that is a major data gap, especially for certain species, and I don’t know if it’s appropriate to add more detail for that specific component.

MR. RINDONE: You don’t get what you don’t ask for.

DR. CHAGARIS: Right, and so I would say that some of the -- If we wanted to expand on that particular -- I mean, this is just one bullet in a ten-page document, but this is really a major data gap, and I would say that, specifically, what’s lacking are contemporary diet composition data for large-bodied reef fish in deeper water, because most of our diet data are coming from trawls and nearshore surveys, and even the hook-and-line surveys -- The FWC runs for larger snapper and grouper, we have barotrauma issues, and so we don’t get diet data out of those surveys, and so this would probably have to require some specific targeted sampling for certain species, or probably the highest-priority species, for the council.

The other thing that’s missing, specifically in terms of predator-prey, are the pelagic component, and we don’t really have good comprehensive surveys, fisheries-independent surveys, for pelagic predators, and so mackerels and things, and I’m thinking specifically about the issue we’re in with menhaden, Gulf menhaden, where we are building the ecosystem models, and we’re having to make a lot of assumptions about the predator dependence on menhaden, based off of the existing diet data, and a lot of that is due to a lack of information on the pelagic predators. Basically, the further offshore you get, and the larger-bodied predators, we have less information.

DR. PATTERSON: Ryan, in the scope of work, it says these priorities are updated every five years and approved by the council and help to inform funding priorities for continuing and proposed research and monitoring efforts as they relate to managed species in the Gulf, but the council doesn’t actually typically fund these types of projects, and so how are these incorporated into things like MARFIN or CRP?

MR. RINDONE: Carrie, can you elaborate on it? My understanding is that they do help inform MARFIN priorities, but you’re right in that the council does not directly offer research grants to
support any of the priorities that are listed here.

EXECUTIVE DIRECTOR SIMMONS: Thank you, and so we point a lot of people to this on our website, particularly after Deepwater Horizon, with the various pots of money, and I don’t dare mention all of them, and I get them all confused, but we use that a lot regarding what the council’s priorities are.

We also use this list when we are reviewing the MARFIN priorities, and I have a chance to look at that now, in my position, and the S-K priorities, and I think that’s with council leadership and myself, and with the Cooperative Research priorities, and so we try to take a look at this, and a lot of them are very large, and so it overlaps regardless, but we use it as a tool in that way, and we point a lot of other folks to this as well that may have funding for specific projects.

MR. MARESKA: When I see these large bulleted lists of data needs, it seems like all of these have equal value, and so someone that has more knowledge of the ecosystem data needs and which ones should have a priority, and I think they should be communicated to the council, so they can prioritize these bullets, and so this just too long of a list to assume that all of them are equal.

MR. RINDONE: This list will be brought back before the council for their approval in October, and so you guys would have another opportunity to take a look at it in September as well, and that will give you maybe a little bit more time to digest this, but just going through it and identifying where certain priorities might need to be adjusted and where additional clarification might be necessary, or even we hit this bullet point and we can delete this. That’s all very helpful.

DR. SCYPHERS: I could also be overlooking this, but one thing I’m not seeing is much explicitly on shore-based fishing, and I think that’s come up quite a few times recently in the gray snapper stock assessment, and it’s coming up in yellowtail, in the ongoing data workshop, quite a bit, and so it could be explicitly listed there, even though it’s not a big component of yellowtail, and it was for gray, but I think pointing out the uncertainties with shore-based effort and behavior could fit probably in the discard mortality section, which is, almost to Dave’s points, is prioritized pretty highly, and then some of the specific species are prioritized lower, but calling out that part, whenever possible, would be something that I think could be needed.
MR. RINDONE: Steven, you recommended putting it here in discard mortality, but it seems like it’s a very large topic that is kind of multifaceted, and, since you would be interviewing -- Would that perhaps fall better up here in like fishery-dependent monitoring and sampling and trying to interact directly with people fishing in the shore mode? I am just trying to figure out exactly where to put everything, because it seems like there is multiple questions that need to be answered with respect to this particular fishing mode.

DR. SCYPHERS: Yes, and I see your point. I think one answer to that could be -- I think it’s to Benny’s point earlier, but there could be an explicit study that involved looking at some of the reported measures of this alongside observations, and so this could be something that is a bullet point, perhaps, under there on its own, but then I don’t know how this would particularly interface with some of the ongoing assessments, maybe, with FES, where they were talking about that shore-based is an area that’s getting an extra look there already, and so that’s probably not a good answer.

DR. LORENZEN: I have a little addition, and I just sent you an email with some text, under social and economic. I think it would be useful to have research on evaluating sort of communication and stakeholder engagement approaches, and so, for example, we are talking about bringing more people into voluntary reporting, and then that’s a very researchable thing, and so what motivates people to do that and what are the barriers and so on, and so, in the big area of communications and stakeholder engagement, to do some research that would actually inform improvements of how we go about that.

MR. MARESKA: Kai, was your intent that that would go under the ecosystem?

DR. LORENZEN: I was thinking under the social and economic. I mean, it’s sort of a bit overarching.

MR. MARESKA: I was just making sure Ryan is in the correct place, because the last bullet under b, the ecological relationships to the ecosystem stuff, is develop the social and economic indicators, and so I didn’t know if that was going to be in addition to what you are proposing.

DR. LORENZEN: This is more about how we communicate and not so much about the indicators.

MR. MARESKA: Okay.
DR. LORENZEN: Thank you.

MR. MARESKA: Ryan, let’s go back up to Item h, the episodic mortality events, and I guess the only comment there was work towards predictive abilities to generally estimate potential effects of such events in the future. Okay. We regularly do this now, and so it’s already being done.

MR. RINDONE: This is my opinion from my observations of the SEDAR process, which is why I put this comment in here. To the extent that we can, and to the extent that we have the data to do so, we do this now, and so whether you want to continue having this in there or not is something you guys can discuss, but I didn’t know if you wanted to keep things in here that we are currently doing.

MR. MARESKA: You have got predicative abilities, but I don’t think these predicative abilities are actually incorporated into potential impacts on the stocks in the stock assessment itself, correct?

MR. RINDONE: I will let Shannon go.

DR. CALAY: It’s a difficult question. When we know something has occurred, like the red tide in 2018, that actually occurred after the terminal year of the stock assessment, and so that’s in the projections, and so we do that sort of work, where we incorporate known environmental indicators.

We don’t yet -- We also, for example, try to get a better estimate of the terminal year recruitment from some modeling products, connectivity modeling products, that we know are -- Like loop current dynamics that are suggestive of recruitment, and so we put that in as a predictor of what the terminal year recruitment would be, because that estimate is not well informed by other sources of information in the stock assessment model, because there is no -- Because there fisheries don’t usually fish on age-zeroes, except the shrimp bycatch, but we don’t right now incorporate predictions of ecosystem events that might occur during projections that we don’t have estimates of. Do you see the nuance that I am trying to communicate?

The word “predictive” here in this recommendation -- We could theoretically predict a time series of Gulf of Mexico sea surface temperature related to some characteristic of a stock, say growth, and put that into the projections, but we don’t currently do that.
MR. MARESKA: So no wordsmithing on that?

DR. CHAGARIS: On this episodic mortality events, and maybe it
goes into this section, or maybe there’s a section later that it
might bit better in, but the other thing that I see missing with
this is how do we manage in the face of these extreme mortality
events, and so how would you adjust harvest or catch limits in
the year following a red tide event?

I think that there is also a big need for some type of
management strategy evaluations and simulations, and I know that
Skyler has done -- You all have done some of this at the Science
Center, but I believe there is still work to be done on that, so
that, when we are faced with this situation where you’re in a
projection scenario and a red tide event occurs, or something
happens, what is the advice that we give, versus just a decision
table of kind of what-ifs, and so there could be some simulation
work to inform the management response to extreme events, or
continued work.

MR. MARESKA: I see that Luiz isn’t here, but I was just
wondering if there’s any kind of programs in place to actually
try and quantify the extent of the mortality a little bit.
There is Luiz. Luiz, we’re talking about these episodic
mortality events and talking about harmful algal blooms, and, as
an example, is there any mechanism to try and estimate the
impact on fish stocks and collect actual information to quantify
the abundance and the extent of those impacts?

DR. BARBIERI: Well, I think Dave Chagaris would be better
prepared. Last time, I guess for the last couple of
assessments, we worked with Dave in kind of setting up the
protocols, the data, the actual data to go out there and count
that fish or collect fish to look at the age composition of what
has been impacted or size composition, and it’s really prone to
a fairly large amount of error, and so it’s something that is
difficult to evaluate, other than you look at trends in indices
of abundance over time. I mean, we have these indices of
abundance, and you can see trends going up and down pre and post
events, but Dave would know more about the specifics of how do
you translate this into inputs.

DR. CHAGARIS: This comes up a lot, and FWC has their Fish Kill
Database, and I don’t know if Alisha is here, but, when she was
studying under Cam Ainsworth, she made an attempt to incorporate
the fish kill data into a red tide analysis, and there’s issues
with that as voluntary reporting, and you’re only reporting the
fish that wash up on the beach, and you have observations from research vessels of dead fish, but those are only ones that float, and so this is why we’ve resorted to simulation and modeling, where we have species distributions and maps of red tide blooms.

**MR. MARESKA:** Dave, has your concerns been entered into h up there? All right. Then, Ryan, we can move on to Category II, the priorities associated with individual species, and so I guess what jumped out at me is just everything seems to be a Priority A, particularly for something like red snapper, and so, if none of these priorities were met, I think the rebuilding plan would continue as projected, and so I’m not sure -- From a science point, does this need to be an A? From a management point, I guess it is an A, and so that’s just an opinion.

**MR. RINDONE:** You guys can revise these priority codes at-will, and these are all recommendations that go forward to the council.

**MR. MARESKA:** Red snapper had a substantial increase in items, and so the first three were pre-existing, and all the remaining bullets were added since the last version.

**MR. RINDONE:** I added a lot of bullets to several of these species, based on research recommendations from the SEDAR assessments that took place between when the last set of research and monitoring priorities were finalized and a month ago.

**MR. MARESKA:** If there are no comments on red snapper, we’ll scroll down to greater amberjack. The last two bullets are new. Carrie.

**EXECUTIVE DIRECTOR SIMMONS:** When you say new, you mean that you recommended adding those from the last time that we reviewed this?

**MR. MARESKA:** No, and so the previous version did not have those two bullets.

**MR. RINDONE:** In 2014.

**MR. MARESKA:** So these were added.

**MR. RINDONE:** These are new research recommendations.

**EXECUTIVE DIRECTOR SIMMONS:** Could you go back to red snapper
for a second? I guess we can look at this again, but some of
these seem too specific, and like is this something that should
be in the terms of reference, and so that’s just a question.

DR. PATTERSON: I was thinking kind of the same thing, Carrie.
Not only do they seem too specific, but some of them seem very
specific to the stock assessment model or that sound like a
sensitivity analysis or that type of thing and not empirical
data collection to try to improve model parameterization or try
to understand some type of process that feeds into the model.

MR. RINDONE: Part of the research recommendations that come out
of the stock assessment can include things like a suggestion for
a change in how something is modeled, that there simply wasn’t
the time, or the methodology simply didn’t exist at the time the
assessment was being run, and so those -- Under those
circumstances, those recommendations are provided as part of the
stock assessment process, and I put those in here because it may
need to be that someone seeks funding to be able to dedicate
time towards fixing that portion of the modeling environment to
accomplish X goals, and so it may not be empirical data
collection involved with accomplishing whatever that bullet
point is, but it may be critical to addressing some other need
as part of improving the modeling environment for our
understanding of the reality of the species.

DR. CALAY: I certainly understand the desire to retain these
recommendations, to make sure that they are considered in future
assessments, and I note that a number of these are relatively
old, and so some of them have already been completed, and others
are in progress, and I don’t know where the most appropriate
place is to archive these recommendations, but it could be that
we work to create an archive of research recommendations and
actually indicate whether they have been completed or whether
they are in progress or whether they require additional
resources that have not been attempted, and I don’t know where
such an archive belongs.

MR. RINDONE: As part of the SEDAR efforts, we had actually
tried to do this a while back for all species across all SEDAR
cooperators, and the list was -- Let’s just say ten pages looks
short, but keeping up with that list, obviously, would take
pretty considerable communication between the Center and all of
the cooperators, to make sure that it was up-to-date.

In the absence of that effort being maintained, it has kind of
shifted to the research and monitoring priorities, and so, if
there’s a better way to generalize some of these things, then,
by all means, let’s change some language, and, if there are
things that have already been done, then, by all means, let’s
remove them from the things that we think that we still need to
do. Again, we have time to work on this too, and so --

DR. CALAY: I mean, this reads, to me, like a list of various
reviewer comments about specific stock assessments, and, in
general, it’s been our attempt to look at the body of
recommendations and try to establish best practices that --
Because different reviewers have different perspectives, and not
all of these recommendations are equally appropriate, and so I
am not quite where this belongs.

I think maybe it needs a conversation between council staff and
SERO and the Science Center to boil this down to research
recommendations that relate to stock assessment that have not
yet been accomplished and then maybe a list of what has been
recommended and what our response -- Sometimes these cause
changes in our common practices, and so they’ve already been
accommodated in SEDAR assessments that come out of one group,
and it’s not clear to me that all SEDAR cooperators have made
the same choices.

I actually think this is interesting, and I actually think it
requires a little more work to coordinate across the various
SEDAR cooperators, to make sure that we’re all understanding
what has been recommended and moving towards common best
practices, when possible. Rick suggests a database with key
word search capabilities, for example, and so, when we’re in the
process of structuring an assessment, we would have an
opportunity to look through this in some fashion that would be
searchable.

EXECUTIVE DIRECTOR SIMMONS: I thought at one point we talked
about, after each assessment, when the SSC reviews it, we were
going to put like an appendix in the report of the research
recommendations from that assessment, and I don’t know, staff-
wise, if we’ve been doing that consistently, but I thought we
had discussed that at one point, and so perhaps maybe it could
live there, but I am not sure about this list currently, and so
we can think about it some more, and maybe we can move on, but I
think it’s a little too specific, personally, but we can think
about it some more.

MR. RINDONE: There is a chapter in the stock assessment reports
right now that specifically addresses the combined research
recommendations from the different workgroups, and that is
included in every assessment, and so that exists already, but
creating a keyword, searchable database is not something that we
have continued to cultivate or have the ability to just produce
quickly.

EXECUTIVE DIRECTOR SIMMONS: Yes, and it’s just remembering to
search that and remembering to look at it and to remember
considering it in the terms of reference, and so I was just
trying to make it easy, but we can work on that later. We can
work out the best practices later on that.

MR. MARESKA: Okay. Moving along, we kind of looked at greater
amberjack, and I don’t know if we need to revisit that.

DR. FROESCHKE: One comment. I guess that first new bullet
about the new GLM factor, that just seems like a model
selection, and that doesn’t really seem like a research bit, and
so, if you’re kind of thinking along those lines, I guess that
would be one that I would recommend to remove.

MR. MARESKA: Okay, and so that’s under the greater amberjack.
Okay.

DR. ISELY: The second bullet on sargassum seems like it would
go better under triggerfish than under amberjack.

MR. MARESKA: Ryan, I guess that’s a recommendation to remove
those two bullets.

MR. RINDONE: It’s under triggerfish, also.

MR. MARESKA: Yes, that one bullet is there already, and that
was an addition.

MR. RINDONE: That was from the amberjack assessment for looking
at sargassum with respect to amberjack.

MR. MARESKA: Okay. Gag. I think that bullet -- This was not
added, but I think this is kind of addressed under the ecosystem
considerations and management strategy evaluations that Dave was
talking about, and so I’m not sure that even needs to be in
there, in my opinion.

MR. RINDONE: No mutinous comments?

MR. MARESKA: No comments, and so a recommendation to remove it.
We can go on to hogfish.

MR. RINDONE: One second, John. Luiz.
**DR. BARBIERI:** Just a note that I got here from Julie Neer, just to let us know that SEDAR maintains a master research recommendations list that has every record from every SEDAR, and so it is on the website. They are still doing that, and so that’s just an informational thing.

**MR. RINDONE:** Is it keyword searchable?

**DR. BARBIERI:** I don’t know, but she is probably listening in and will let us know.

**DR. CALAY:** It sounds like we could work with SEDAR to try to create a better tool that is searchable and that allows us to have some conclusions about whether that has been rejected as essentially not an area of interest anymore or whether we have agreed to work on it or completed the work regarding various recommendations, and so I will try to look at what Julie -- I haven’t looked recently at that list, and so we can see how we can use it better than it’s currently being used.

**MR. MARESKA:** Go ahead.

**SSC MEMBER:** Where do these wish lists go? What is their fate? Is it just a list of this is stuff we would like to have and it’s published somewhere and dependent on funding agencies, or what happens?

**MR. MARESKA:** That’s a good question, and I assume they are shared with the NOAA staff, and hopefully they go into -- They are shared with the MARFIN committee and other granting agencies, CRP, and hopefully they review these things and they become part of the priorities, but I couldn’t tell you for certain.

**DR. CALAY:** There’s always been a conundrum, because many of these research recommendations do require resources, and so those ones are passed to granting agencies for priorities for MRIP, for example.

We are kind of at the mercy of who submits proposals and for what species, and so, oftentimes, for example, the research for red snapper is high priority, but some of our other stock assessments are lower priority, and so they don’t receive the same kind of attention.

The ones that relate directly to stock assessment -- We certainly consider those when setting our research priorities.
for the Sustainable Fisheries Division, and research priorities in our group come with a commitment of time, but no actual dollars for research activities, outside of what can be procured through extramural funding, and so it’s a little bit challenging.

Stock-assessment-specific ones, we typically try to address as we begin the stock assessment process, and it would certainly behoove us to review all of the research recommendations that came from the previous assessment and see which ones can be accomplished, and so that’s something I think we need to probably improve upon, to make sure that we’re aware of the history of research recommendations that have come out of assessments in various stocks.

MR. MARESKA: All right, Ryan. Where are we at? You’re on Section II, and so I think we’re on to hogfish at this point. The last three bullets on hogfish were added in this current version, and I assume these came out of an assessment as well.

MR. RINDONE: Yes.

MR. MARESKA: Okay. Any comments or changes or additions? All right. The next species is tilefish, and this species was actually downgraded in its priority code from a B to a C in this recent version. For the South Atlantic and Gulf of Mexico goliath grouper, there were no changes or additions to that species at all.

Now we’re moving on to red grouper, and the last four bullets there are all additions to this version, and so that last bullet of enhanced fish kill reporting, I don’t know how practical that is.

MR. RINDONE: This bullet right here?

MR. MARESKA: Yes, and so that’s a very vague bullet, to enhance fish kill reporting, and there’s no guidance there of how to operationalize that or enhance that, and so, Luiz.

DR. BARBIERI: Well, this is one of those things that probably came out of a SEDAR review panel that was trying to assess the importance of that red tide kill offshore and trying to characterize age and size composition of the fish that were impacted, but not really knowing the complexities that getting this type of information involves, and I don’t think it’s something that is really practical at this point, that is doable, and that would be a productive way to get a better
information for red grouper, really. I would recommend removing it, but I would defer to the rest of the committee.

**MR. MARESKA:** I agree with you. I am not seeing any objections, and we’ll move along. Andrew.

**DR. ROPICKI:** I don’t have any problems with the priorities or the points themselves, the bullets, but it’s the priority code. I mean, that’s a super important species to the commercial sector, and a C -- I mean, you look at historical landings since the IFQ was implemented, and that is the grouper-tilefish fishery, and so a C might be a little low there.

**MR. MARESKA:** Okay. I can agree with that.

**MR. RINDONE:** Do you have a recommendation for a different one?

**DR. ROPICKI:** B or A.

**MR. MARESKA:** Well, I think red grouper is in a stock assessment right now, and so --

**MR. RINDONE:** It’s done. You guys get to see it next meeting.

**MR. MARESKA:** I guess, depending on the outcome of the results of that stock assessment, that would be informative of whether it’s a B or an A. Going through the next couple of species, there is really no changes or additions for yellowtail snapper, vermilion, yellowedge grouper, but the South Atlantic and Gulf of Mexico black grouper -- That was actually increased to a priority code of B, but no changes to any of the other information needed there.

**MR. RINDONE:** I increased it from a C to a B because of what went down with the last data workshop for black grouper. That’s a very brief summary, but there are multiple outstanding issues, and we’ve gone from a known to an unknown stock condition, as we discussed during this meeting.

**MR. MARESKA:** Okay. Moving right along to Atlantic and Gulf of Mexico king mackerel, Priority C, no changes, and so, for the rest of these species, there has been no changes or updates to any of these.

Then to Section III, the economic and social recommendations, those were pretty status quo, except for Item Number 4, and I think this was a change. Part of the last sentence there, under Item Number 4, is, as changes in fishing practices, non-quota
holders following implementation to catch share programs, and there is some comments there. Ryan, do we need to discuss those at all, or is this more of a --

MR. RINDONE: Ava is neck deep in this particular area, and so I will let her comment further, if she wants. Generally, for how this could have an impact, when an individual was able to fish for a certain species commercially, and then the establishment of the IFQ program, for program reasons, results in their not having allocation for a particular species, does that cause a shift in their fishing effort, and does it cause a decrease or an increase in their fishing effort?

How is that all affected, and, that characterization of effort, whether it goes up or down or whether there is effort shifting to other species is all important for the assessment of those other species that that particular fisherman, or group of fishermen, in this case, since it would apply to all fishermen that were excluded from the program, how that shift in effort affects those other species.

MR. MARESKA: I don’t see it generating any questions, and so I think we’ll just move along.

MR. RINDONE: Did I characterize that appropriately?

DR. AVA LASSETER: I was reading while you were doing that, but I’m sure you did. If not, we’ll follow-up later.

MR. RINDONE: Good talk.

MR. MARESKA: Yes, and then the last sentence in Number 5 is develop scales to use socioeconomic indicators as triggers for evaluation of fishery management decisions, and so I am not sure what kind of scales and what socioeconomic indicators specifically they are looking for.

MR. RINDONE: This relates more to discussions about reviews for allocation and determining -- Because we have been asked to review our sector allocations on a periodic basis, and the council is currently working to develop a plan to be able to do that, and with certain intervals by species, and so develop scales using socioeconomic indicators as triggers for fishery management decisions, one of those being allocation, and so this is just part of that, and also fishing zones in the past.

Like with king mackerel, we have changed the allocation between commercial fishing zones in the Gulf to more reflect the needs
of the fishermen within those zones, balancing abundance against industry need for access to the fishery, and so this broadly swats that need.

MR. MARESKA: Okay. Well, since I guess the council added this, then --

MR. RINDONE: Staff added it based on obligations of the council.

MR. MARESKA: Okay. Any comments on that? All right. Moving right along to the last item, Item Number IV, and so the ecosystem-based management recommendations, and that should have a scale for priority codes, I guess A through C there, and that needs to be added in.

MR. RINDONE: Before we get there, Item 10 that Kai had requested be added under economic and social considerations.

DR. LORENZEN: It would be an A, obviously.

MR. RINDONE: All right, and so now on to Section IV. Kai’s addition was to evaluate the effectiveness of communication and stakeholder engagement approaches, including opportunities for stakeholders to provide input to stock assessment and management processes and barriers to participation, effects of engagement opportunities on stakeholders, perceptions of management processes, and opportunities for meaningful participation and related issues.

MR. MARESKA: All right. The last one is the ecosystem model development, and so this is specific to the models that are currently being used, and so that got a low priority, and I guess they’re thinking that the models are well developed, but they just need more data at this point, and so I guess, until we get better data, we can’t improve the models.

MR. RINDONE: That is the general sentiment, and that can be noted directly in that line under model development, if that’s something that you guys think is appropriate, or you can reevaluate the priority code, and you have options.

Mr. MARESKA: That wraps it up. If there is any more questions or comments in general about the whole priority list -- No? I guess we can turn it back over to Joe.

CHAIRMAN POWERS: Thank you very, very much for doing this. the lunch is here already, right?
MR. RINDONE: Yes.

CHAIRMAN POWERS: Then this would be a convenient time to take one half-hour for lunch, and so we’ll come back in thirty minutes, which is 12:18.

(Whereupon, the meeting recessed for lunch on July 31, 2019.)

---

July 31, 2019

WEDNESDAY AFTERNOON SESSION

---

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

SCOPE OF WORK: GRAY SNAPPER OPERATIONAL ASSESSMENT

MR. RINDONE: As usual, if anyone doesn’t like anything that’s written, John did it. This is our operational assessment scope of work for gray snapper that you guys have up before you right now.

DR. FROESCHKE: That’s right.

MR. RINDONE: This is our operational assessment scope of work for gray snapper that you guys have up before you right now, and, at the last SEDAR Steering Committee meeting, the cooperators for SEDAR, which are the councils and the commissions, talked with the Science Center about the best way to approach developing these scopes of work for the assessment, and the goal is to try to have the scope of work approved and submitted to the Science Center two years ahead of when the assessment is scheduled to begin, and it just helps with all of the planning things that happen on the frontend that most people don’t see or hear about, but they are many, and they are time consuming.

Just as a refresher, the way that we’re doing things now, with the research track and the operational assessments, is to develop this scope of work, which is kind of like a precursor to
the terms of reference, and this is where we put our wish list together and all the things that we want to have happen, what terminal year we want to use, and whether we think that this particular assessment needs in-person workshops or webinars are fine, just to kind of lay everything out there.

I have provided these to you guys in the form of the terms of reference, because it’s what you’re using to seeing, and, frankly, it’s what I’m used to seeing too, and it just provides for a known structure to move through this, and it will also make it easier on SEDAR when they go to create terms of reference for the assessment, which you guys will ultimate approve, and it’s already in the same format.

For this particular one, for gray snapper, again, it’s an operational assessment, and we have a listed terminal year of 2019, and so the terminal year for the data will be 2019, and, if you look through, in the second bullet, you can see all the things that we’re asking for. In the interest of time, I will not read them all. Mr. Gill.

MR. GILL: Thank you, Ryan. My question relates to the first bullet under 2, and, if you look at the schedule, it is scheduled to start, this operational assessment, sometime in 2021, and, as yet, it’s not determined when in 2021, and so my question relative to the first bullet relative to red tide is why not include red tide impact from 2019, 2020, and 2021, as appropriate, relative to, for example, projections, much as is being done in red grouper?

MR. RINDONE: Thank you. The only reason why I didn’t put that in there is we don’t know that there will be an event of measurable magnitude during those years. If there is, we can certainly send the Science Center a letter saying, hey, some more of this has happened, and, if it’s possible to consider this, we would appreciate it, but, again, the terminal year of data is going to be 2019, and so, anything beyond that, we could try to incorporate in some way into projections, if it’s possible to do so, but the expectation at this point for this assessment should be that the terminal year for things to be considered would be 2019.

DR. NANCE: I would just put 2019 on red tide. I mean, I don’t -- If we’re going to have the data through 2019, then everything, whether red tide or whatever, should be through 2019.

MR. RINDONE: Shannon.
DR. CALAY: I am concerned, and, in our concept of research track assessments and operational, the operational assessment was meant to essentially be an update, and the schedules are very short, and there, in most cases, is no in-person data workshop, and our impact on the data providers is meant to be small.

I am seeing here a lot of requests for additional work that would have to be done by data providers throughout the Southeast, and new research that would have to be done to incorporate that information into the stock assessment, and so, if this entire list is forwarded to the statement of work for operational, this is much closer to a benchmark or a research track assessment than an operational assessment.

Furthermore, I don’t know how gray snapper is a priority compared to some other stock assessments that we might recommend updating first, and so I’m not sure how the council, at this point, is prioritizing their list of assessment needs.

MR. RINDONE: I can speak to the prioritizing aspect of that. At the culmination of the last assessment, which was SEDAR 51, gray snapper was projected to have been undergoing overfishing for several decades, and the overfished condition was dependent largely upon the ultimate status determination criteria that will be codified through Amendment 51, which is slated for final action at this upcoming council meeting.

The overfished condition at the time, combined with -- Sorry. The overfishing condition, combined at the time with the uncertainty about the overfished condition, made gray snapper a priority from an assessment standpoint, and it’s my understanding that, from subsequent projections, we have learned that we are out of that overfished condition under the recommended status determination criteria in Amendment 51, and overfishing is not thought to be presently occurring, but it’s still -- It’s a ubiquitous, but important species, in the Gulf, and so it remains a priority for the council since its assessment, and so, unless Paul wants to weigh-in a different way, that’s the story.

DR. MICKLE: I will try. I just ate a hot pepper, but, yes, that’s correct. Ryan has been conveying on the council that, if you change the order of stock assessments in the next year, or even the year after that, it affects everything, and we all know that, but, just to echo that point from Ryan, it has definitely become a priority, gray snapper, which brings in range
expansions and things that the council has discussed, and I
would love to have some discussion, if we have time at the end
of the meeting, to talk about how stock assessments could
potentially look at range expansions in a more quantitative way,
but that’s a different discussion, but just to agree with Ryan
that it has been a priority, and every state has shown, or at
least made comments, that it’s a high priority in their state,
and it has held, and it holds its position on the SEDAR schedule
where it presently is, and it’s always fun when Ryan brings all
this up, because half the states want to change the order, but
this one of the species where they haven’t challenged moving it,
ironically or not. Take it however you want.

MR. RINDONE: To expound a little bit further, we have been
trying to reiterate to the council that any assessments that are
scheduled within the next two years are, barring some drastic
emergency, are off limits to change, because of the effect that
that has on the SEDAR schedule and with trying to get all of the
data organized for those assessments that fall within that time
period.

If there are things on here that just strike you as we simply
can’t do that within the scope of an operational assessment,
let’s definitely identify those and consider how to move forward
with them.

DR. CALAY: This is meant to be an operational assessment,
according to the header of the document, but this is reading
more like a research track assessment, and certainly we can meet
with our data providers and see if any -- What here is possible,
given current -- Within an operational assessment and within the
calendar of other SEDARs that are scheduled, but most of this
research is not necessarily -- Let’s put it this way.

My team depends on data collected by Panama City and by other
partners, the states for example, and so some of this may be
work that is in progress that could be evaluated in the context
of an operational, and some of this may not be currently in
progress at all, and so it’s certainly -- If you want stock
assessment throughput and efficiency, then operational
assessments are meant to be updates. If you want to continue to
especially do research track/benchmark assessments, our
throughput will be reduced substantially.

MR. GREGORY: I am little confused. The three major items there
that it says consider, it’s simply a listing of what was in the
last assessment, and it’s not saying research them or anything,
and so, I mean, if that was taken out, you would still use those
parameters with an update, right? Then I have another question.

DR. CALAY: I think it becomes -- If you write “consider”, and we don’t consider it, because no new information is available, is that a sufficient response?

MR. GREGORY: Yes.

DR. CALAY: All right, because, in proceedings that involve CIE, that is not always a sufficient response. Sometimes they express displeasure at terms of reference not met, and so it depends on how rigid this statement of work is to be interpreted, because there may be things here that, when we get around to the operational assessment, no new information is available to us, and so we can’t consider it further.

EXECUTIVE DIRECTOR SIMMONS: Something you brought up earlier, Shannon, was we could request, under this new regime, an operational assessment, and we could request an in-person workshop, because this is our scope of work, which I guess we would follow up in more details, perhaps, later with terms of reference, but that is an option, and so I guess, if this committee and the council wanted to do that, we would request that at the September SEDAR Steering Committee meeting, and is that useful, and would that help some of this, as far as getting the data providers together to resolve some of these potential issues?

DR. CALAY: Well, it certainly is useful to have in-person workshops. The problem we’re facing lately is diminishing budgets to attend workshops, and so, yes, you can have the workshop in Miami, and my staff and Dave Gloeckner’s staff can attend, but then Panama City has to travel, et cetera, and so there is no way around that in-person workshops are costlier.

That being said, another fear, or not really so much a fear as experience, is that, when you introduce these changes, sometimes it is necessary to reconsider model parameterization and to rerun sets of diagnostics to re-tune the model, and I think that I am still concerned about -- Clay has made some progress with the councils to try to say that the way to improve throughput, and he has given some numbers on what he thinks the improvement would be, is to introduce this operational assessment.

If we continue to make these essentially standards or benchmark assessments, we will not realize that increase in throughput. It just won’t happen, and it’s impossible, and so it’s really a matter of do you want more frequent information from stock
assessments to manage fisheries or do you want less frequent information that we believe to be more realistic, in terms of biological and fisheries knowledge?

I think that it’s actually important to manage fisheries with frequent information and then create some kind of a calendar for when we would conduct research track assessments to improve the state of knowledge, and those should happen relatively -- As frequently as we can possibly do that, but, if this continues and operational track assessments remain such a burden, we won’t realize this increase in throughput that Clay has been suggesting. It will be business as usual, five assessments a year, conducted Gulf and Caribbean.

EXECUTIVE DIRECTOR SIMMONS: I think, from my perspective, and just starting to sit in on the Steering Committee meetings, that this new process is a bit confusing as to what we can ask for under these new types of operational assessments, moving away from a standard, and so we’re going to ask for everything, of course, upfront that we can, that you guys may be able to accommodate, and so, if we could get more feedback, perhaps, on these scopes of work before we have to have a final product submitted to SEDAR, I think that would be really, really helpful, from my perspective anyway, because, right now, I think it's a little bit unclear what we can ask for within this new process.

MR. RINDONE: Mr. Chair, if I can jump in. To expand on what Carrie said, the way that we’ve understood this process to go is that we draft up a scope of work, and we present it to you guys and kind of beat our heads together about it and figure out what you want to do, and then it gets passed along to the analytical body, in this case the Science Center, for gray snapper, which says these things are feasible and these things are not, and it’s a multi-pronged, multi-entity negotiation process, until it gets to a point where it’s ironed out.

It may be that we need to do with the Science Center what we test drove with FWC for hogfish, which was I nagged Luiz about it, and then we got the hogfish scope of work to a point where the analytical body, in this case FWC for hogfish, said that, yes, we can do these things this way, and so maybe it’s just a matter of budgeting time ahead of time to try to work through those sorts of things and make our wish list more practical.

I did want to reiterate though that the things in here that say to consider SEDAR 51 recommendations for, and then insert the rest of it, those are just straight from the last assessment.
If those are things that there hasn’t been any progress made, and there is not projected to be any progress made, then it’s summarily considered, and the review body for all operational assessments is the SSC.

It's not like there is an additional CIE desk review or anything like that that could deliver a finger-wagging because they didn’t think that a term of reference was met. If the understanding of this review body, which is responsible for the determination of this operational assessment, says, if you looked at it and you can’t do it, then you considered it, that’s good enough, and, to the Science Center, there hasn’t been any objection to that interpretation. Doug.

MR. GREGORY: In an attempt to move on, one of the things you have here, Ryan, is that the SEDAR 51 recommendation for reproduction -- You said use female weight-length relationship with the size at which 50 percent of individuals are sexually mature, set at 300 millimeters fork length.

The stock assessment actually said the 50 percent maturity level was at 253 millimeters fork length, and so that needs to be changed. They did say, in the assessment, that 300 was -- It was a more significant contribution to the spawning stock above 300 millimeters and that it -- Consequently, 300 millimeters fork length is a more accurate estimate of maturity for gray snapper.

I don’t understand that logic. I mean, if that’s not L50 -- I think they took a leap of faith there, and so, to me, maturity is at L50 and not some level above that that I am more comfortable with, and I have another question about this scope of work, also.

MR. RINDONE: Okay. To Doug’s point, the life history working group looked at batch fecundity at size and age, and anything basically 300 millimeters, the reproductive contribution of individuals, although sexually mature, below that size was inconsequential in terms of its contribution to reproduction for the stock, and so that’s why they recommended 300 millimeters be the reference point at which size at 50 percent maturity be measured, and so, basically, below that, it’s almost as if it’s zero.

MR. GREGORY: That’s true with all of these snappers, and so, to me, it’s irrelevant, but the other issue I have, or not an issue, but a request that I have is that the last item under 3, where it says “provide yield streams”, I would like to add
“provide yield and spawning stock biomass streams”. Again, I am interested in seeing how the population is responding and not just how yield is responding. Thank you.

DR. CALAY: Just noting that a lot of this information is already available, and so, I mean, in fact, it’s already in the reports that we’ve produced, and so there is a mixture here of things that have already been done and things you are recommending be done, and that’s fine.

DR. NANCE: I guess the key is that an operational assessment should be what we consider was an update, and there can’t be model changes and anything else, and I think we’ve got here kind of a mixture of things that have already been changed and things that we want to see, and I think we need to keep it at an update, and operational should just be new data into the model.

MR. GREGORY: I didn’t go to the Steering Committee this year, but, in previous years, the guidance was that an operational assessment can be a standard or an update, depending on what’s needed, and, in my mind, it should have been negotiated between the council staff and NMFS even before it came to us, so we wouldn’t have that type of conversation, or it occur at the Steering Committee level.

I just wanted to point out that it could be a standard, or it could be an update, and a large part of that has to do with workload, as well as the need of the council, and I could certainly understand the question as to why the council wanted to do this two years later, when we just had a benchmark assessment, unless it’s along the lines of a research track, where we do an operational immediately after research track.

MR. RINDONE: To speak to some of the conversations at the Steering Committee level, and Carrie can chime in too, when we were talking about gray snapper specifically, some of the things that stuck out were what had to be done during the assessment to address things like commercial discards and the issues that arose with trying to determine the impact of the shore mode for the private recreational component of the assessment and some other issues that we were more data limited than we are with some of our other snapper species.

Those issues are noted within the scope of work, but they’re also the reason why an in-person workshop was requested for this particular assessment, was to provide a forum to discuss some of these more difficult problems that were identified as part of SEDAR 51.
DR. CALAY: I agree that, if we were to put together a statement of work -- I mean, I think Jeff and I would both agree that we had important concerns about the discards, and certainly the way the model fit to the discards, and there has been a new methodology for commercial discards, which would change basically our perception of discards, and so certainly that’s something we would have also proposed.

There was also some concern about whether there was additional information available from the age composition data that we did not include, and so that would certainly also be an area that I would be interested in looking at.

Where I start to see more concerns are these very specific recommendations, such as bound steepness between 0.81 and 0.99 based on the latest update assessment of mutton snapper, and I have no idea if that’s a reasonable range of steepness, and there is nothing there about the shape of that prior, and is it a prior based on -- Basically, is that an uninformative prior, or is that an informative prior, and, if it’s informative, what is the shape of the distribution?

I don’t think it’s necessary -- Those seem unnecessarily restrictive, to me. I mean, if really what you’re concerned about is looking at estimation of steepness or in estimating steepness with a prior, those are certainly things that we could consider, but this looks like marching orders, which always makes me very uncomfortable.

Then, also, there is some work here that would involve our life history teams, and I just want to make sure that they are able -- That, if this is the priority of the council, that we make sure that we have the time in the schedule for them to make these sorts of investigations, because remember that we rely on data providers, and we don’t actually do this work. Jeff and I don’t actually do some of this work. We rely on the data providers, who actually analyze the data and make recommendations to us.

DR. CHAGARIS: In a previous meeting, I was really encouraged to hear that, when you were talking about these operational assessments, that they were going to be fairly stereotyped, and you were going to use some R markdown, or you were going to be developing that, and I thought, oh, that seems great, and so it seems to me that there was a bit of miscommunication, or maybe lack of communication, about the intersect between sort of what you’re envisioning, in terms of the deliverables of what that
document would look like and probably most efficient as a
type, it's -- Am I understanding the sort of vision of the operational assessments
that you had?

DR. CALAY: The vision is we would essentially use research
track assessments to study model structure and to pin down,
through a thorough review, what we propose to be the new
operational model. That would be essentially about an eighteen-
month to two-year, depending on the species, process.

Once we got that operational model in place, we would
essentially propose to increase throughput by doing strict
updates of those operational models frequently, and that we have
already actually have staff onboard now who are creating our
markdown documents, and that will essentially automate the
production of these reports. That is the vision.

The tricky bit is we’re still in an interim process, where some
of our assessments we’re not comfortable that they’re completely
operationalized, and so some of our assessments are currently on
the calendar for research track assessments, to be conducted in
the near future, and some are not, and so gray snapper does not
-- We had a benchmark just last year, I think it was, or two
years ago now, and we have not had an official research track
assessment, but I guess my opinion, personally, about gray
snapper is there are some areas that could be improved, that are
not a heavy lift, but then, in general, a complete benchmarking
procedure for gray snapper right now would not yield much better
data than what we had two years ago.

There has not been a lot of research conducted on red snapper in
the last two years, and so I think there are some good points
here that we can put in a statement of work, but I would hope
that we’re moving towards a time when the operational
assessments will look much more like updates than like
benchmarks.

CHAIRMAN POWERS: John.

DR. FROESCHKE: One thing I would hope, just as a note, would be
helpful is, under Item 3, if we could get just sort of a
notation of the units of output of the assessment, and so, the
recent one, the quota was originally established in MRFSS, and
the output was in MRIP units, and I suspect there will be
another change in this one, and the outputs are likely to be
done in the FES units, and so there will be a change in that,
and it’s very difficult for us to understand that and figure out the directionality of changes and things.

**MS. SCHIAFFO:** Julie Neer is on the line, and she wants to --

**DR. CALAY:** You’re not alone. Frankly, I am trying to wrap my head around how we’re going to do all of this. The best practice guidance right now from NOAA suggests that we’ll be, for at least some period of time, using FES as the best available science, and without the ability to do all the intensive state-based calibrations that would be possible perhaps in the future, but we’re going to have to convert that currency somehow at the end of a stock assessment to be useful for management, and, frankly, I haven’t crossed that bridge yet, but we’ll get there.

I imagine that we’ll be providing the outputs in FES for the stock assessment report, and the management advice, the OFL and ABC, in the units you’re going to use to manage the stock. How we’re going to get there is probably not complicated, but I just have not -- I haven’t tried it.

**DR. BARBIERI:** Just to that point, John, this is going to be, I guess, a very relevant question for this SEDAR Steering Committee webinar that will be coming up on August 26 that is going to unveil the white paper and discuss those types of things, and, by the way, Julie Neer has been emailing some people saying that she is available to weigh-in on some of this and is trying to get through.

**MS. JULIE NEER:** I just wanted to quickly address the confusion about what an operational is under our framework. The guidance we received at the Steering Committee is what Doug and Carrie have said, that an operational can range from a basic update, simply add additional years, up to the more standardish type of assessment, where we include additional analysis and add new data streams.

The reason we have that flexibility built into it now is because, as Shannon said, most of our assessments have not gone through a research track. In fact, none of them have yet, not a single one, and we’re starting the first one now, and the reality is we will probably never do all of them through research tracks until maybe fifteen years down the line and we never do anything new, because they take a significant amount of time.

In the interim, if we have assessments that we have a benchmark
for, and we were very happy with that benchmark, we can go, okay, this is an operational which is towards the update scheme, which is what we’re doing for greater amberjack in 2020 for the Gulf.

On the flip side, if we have an assessment, such as gray snapper, where people had greater concerns, and the review panel and the CIE had concerns of things they would like to be examined, and the Science Center still has things that they would like to examine, those things are appropriate to put in this statement of work.

The reason we are doing these statements of work a year to two years out is to know what the data lift for our data providers will be, and that’s why we’re asking for this so far out. Every cooperator is turning in statements of work for all of their projects, and so everyone is going to look at it. Then they have to look -- Clay and the team need to look overall, what everybody is requesting with regard to data needs, and they will determine whether everyone gets everything they’re asking for.

I think this is an appropriate way to go forward with this statement of work with regard to what the council would like to see, except for that define steepness between this and this, and that is a very kind of marching order one, and I agree that perhaps rephrase that to investigate steepness, but these requests I think are in the vein of what a statement of work should be.

Then, once they have all the statement of work for all the assessments that are going to happen in 2021, we will then get a chance, and Clay and the Science Center will feed back to the Steering Committee and say that you can have everything, but you can’t do quite so much on this assessment, perhaps, and that’s why we’re doing this so far out, so that we can reach out to the data providers, so they have a year to two years in advance to know what the data lift will be, and we’ll know whether we can accommodate all of it or not.

This is an assessment for 2021, and that’s why we’re doing these so far in advance, and so, from our perspective of what the statement of work is supposed to represent, I think this is appropriate. The exact numbers, or whether everyone is going to get every single thing they request in the statement of work are things that have to be negotiated, certainly, but I think you should ask for what you want, so the Science Center has an idea of what you would like to see, and they can determine whether they can accommodate all of that or not.
Operational assessments are not currently just updates, because we have work that has to still be done on a variety of assessments. Others, they can be simple updates, more towards the update realm, and you’re doing that, and so I just wanted to try and clarify where, in general, the thinking was, and this is true for the South Atlantic as well, and we have some that are coming through that are towards basically an update, and we have other assessments that are requesting additional information or analysis, and they’re more towards the standards, but they’re still all called operational updates.

Yes, I agree also with Shannon that, ultimately, we would like to get everything more towards the update realm, so we can get more work done and a greater throughput, but we’re not quite there yet, and so I hope that makes sense. Thank you.

**DR. CALAY:** One additional thing to keep in mind is that the operational assessments right now do not have a formal review process. These are reviewed by the SSC, and so these might be — These might be changes of sufficient nature that they require additional levels of review, and the operational track does not provide that, and so this would be a product that would be essentially done internally to the Science Center, with some potential for panels to meet, and there is no CIE review associated with this.

I just also wanted to point out that Julie is correct that we have not completed any research track assessments yet, but the old terminology for research track was benchmark, and we just did this as a benchmark assessment two years ago, and so there’s nothing magical about a research track. We rebranded the name.

**MR. RINDONE:** If it pleases the committee on this, we can bring this back to you guys in September, and we’ll conference more intimately with the Science Center about this and get a bearing on how to proceed with some of these things that are particular points of consternation.

**CHAIRMAN POWERS:** I think some of the discussion is being lost on us, because we’re not involved in the day-to-day sorts of decision-making that has to go on, and so it’s probably best that that’s discussed amongst those people that do get involved day-to-day, but you had a point?

**DR. CHAGARIS:** A couple of things. First of all, I think we’re at a point now where there is no such thing as a strict update assessment, because the data streams are all changing underneath
us, and so I think the SSC needs to recognize that as we go to update and recreational catch time series that involves a lot of work.

The second thing is I think that we need to try to accommodate the Science Center as much as possible for these operational assessments, to allow this vision of throughput to materialize, and so I would encourage Shannon -- You guys to work together to get these scopes of work where it’s feasible for you guys.

Then the last thing is to a point that Shannon made before about whether we want more frequent and less certain stock assessments or less frequent and maybe more higher-quality stock assessments, and that’s an actual tradeoff that could be evaluated through management strategy evaluation, and so maybe that could be another research recommendation to go into the list, to determine what would be the optimum frequency and target precision level for stock assessments.

CHAIRMAN POWERS: To that point, Rick?

DR. METHOT: Starting first with exactly that point, and thanks for bringing it up, doing that kind of evaluation is exactly what we envision with the prioritization process, in order to establish what is the right frequency for updating assessments, taking into account factors exactly like that, and so I’m really glad that you brought that up.

As I look as an independent at this list for this particular species, the thing that I would think about is to break it into things that are either minor tweaks that would be just part of the new model run for this species that are going to be really small changes and things that are going to require some sort of a comparison, which means model runs with it and model runs without it, and a documentation of that change, basically a sensitivity analysis, which things which require a sensitivity analysis, and I see several like that.

I also see several that look like new studies, like evaluate new ways of doing gear selectivity for this fleet, and, when I see that for a particular species, there is a whole bunch of species that probably should be looked at at the same time in the same basic way, and so, as you look at projects that you need to have in your region, I think trying to find efficiencies for tackling them in a multispecies way is a good thing to do, and, for something like this, there is quite a bit in here that looks like it’s going to require some comparison kind of work, and that gets a bit beyond what was expected as the operational
assessments.

I think, nationally, the research track and operational assessments was very strong in our stock assessment improvement plan update, and we certainly were encouraging people to move in this direction, but we were seeing the operational as really a pretty slim operational and not something that included this much, and so I think you need to partition it down.

CHAIRMAN POWERS: Thank you. Kai.

DR. LORENZEN: A question of clarification. My understanding was that the research track would not lead to projections and status determination and so on, and so there’s a big gap between operational and research, right?

DR. CALAY: Yes, you’re right, Kai, and what we were envisioning is that we would schedule the operational immediately following the research track, and this is in fact what we have done for the two that are currently on the calendar, and so we literally finish the research track and begin the operational, and the timeframe for the operational is very short. It’s just an execution of the decisions of the research track assessment.

DR. METHOT: One more thing I would add is that an operational assessment is essentially the continuity run from the previous assessment approach, with and without the one or two more years of data added on, and so it really should be a very simple thing to implement once you have the machinery in place.

DR. LORENZEN: Except that the data streams will have changed, as you’ve pointed out, for the record.

CHAIRMAN POWERS: Doug.

MR. GREGORY: Ryan, if this is coming back to us in September, would you provide us some more information on the size at maturity, as to what was actually used in the assessment, and maybe we could ask, if it doesn’t bother the NMFS people too much, for a sensitivity run for the two different size at maturity, and it got my attention because the 300 millimeters is basically twelve inches, and the 250 is ten inches.

The people that originally studied gray snapper in the Florida Keys, back many years ago, determined that maturity was eight inches, and that’s a disparity, from eight to ten to twelve, and so it could have an impact on conclusions, and maybe, if we could see the data, the report, from the last assessment in our

195
briefing materials and have a discussion and come to a consensus, then that would be fine with me.

MR. RINDONE: I can definitely provide that. 253 millimeters was what was used as the L50 in SEDAR 51, and, as far as running a sensitivity to see what the difference would be between using 253 and 300, there is a lot that that changes, and I think that’s probably beyond just a -- It’s not? Okay.

DR. CALAY: I’m sorry, but I was just looking at the actual output of the stock assessment, and I don’t know what it says in the report, and I haven’t got that memorized, but we used 50 percent maturity at thirty centimeters in the stock assessment, and it’s a knife-edge function, 50 percent maturity at thirty centimeters.

MR. GREGORY: That’s 300.

DR. CALAY: Yes.

MR. RINDONE: It says 253 in the --

DR. CALAY: I mean, I have the picture of it.

MR. GREGORY: I always felt that gray snapper and yellowtail snapper were quite productive, because they mature at eight inches, and we don’t catch them until they are twelve, and so, to me, this makes a -- This is a four-inch difference in size at maturity from what the historical literature shows, and it may have a function to do with where the data was collected from Panama City versus the original study was done in the Florida Keys, and there may be a difference in maturity geographically.

DR. CALAY: My recollection is that there was a change in the way we parameterized maturity, but that was based on a conversation with Panama City, and my belief is that we executed the recommendation of the Panama City Laboratory. I mean, Jeff was the one who communicated -- The length of maturity, my recollection is that we went through some iterations on that, but I think what’s in the stock assessment control file is the recommendation from the Panama City Laboratory. That’s my belief, and let’s put it that way. It’s always possible that an error was made, but that’s my belief.

Also, there is a recommendation here about the CV on old and young fish, but I’m looking at the control file, and we did have information on that, and it is incorporated in the stock assessment control file, and so there are several things here.
that may already have been addressed. We can look at it in more
detail, and we don’t have to take any more time, but the Science
Center can look at this and parse out what can be done in a
short operational time schedule and what would take more time
and how much more time it would take.

CHAIRMAN POWERS: Thank you. I think that’s kind of the way to
go. On this, do you have any more, Ryan? Good. Thank you.
Then we can move to what is hopefully not a similar discussion
about hogfish.

SCOPe OF WORK: WEST FLORIDA SHELF HOGFISH BENCHMARK ASSESSMENT

MR. RINDONE: Thank you, Mr. Chair. We took a little bit
different approach with hogfish that we’ll adapt and use with
the Science Center, it seems like, moving forward with
assessments where the Science Center is the analytical body, and
Luiz and I and Dustin bounced this scope of work around prior to
bringing it to you guys, and so what you see is the joint effort
of those conversations for the benchmark assessment scope of
work for west Florida hogfish.

The reason why this is being requested as a benchmark assessment
is this is a framework that is amendable to how FWC plans to
conduct the assessment, as opposed to a research track, and so
this will yield management advice at the end, but it’s a
considerable scope of work, given the outcome of the previous
update assessment for west Florida hogfish, where the
uncertainties in the model grew quite a bit. Of course, that’s
an overgeneralization, but -- If you guys want to thumb through
this, and I will answer any questions or anything, but I won’t
read through it.

CHAIRMAN POWERS: Thank you. The scope of work for this meeting
about this is basically a review, and there will be a formalized
presentation of it in September, presumably?

MR. RINDONE: A formalized presentation about this scope of
work?

CHAIRMAN POWERS: Yes. I mean, what it says here is -- What I
am asking is what do you want from the SSC? It says, however,
the SSC will still need to review the formalized terms of
reference at a later date.

MR. RINDONE: Right, and that’s true for any scope of work, and
so the scope of work basically is the precursor to the terms of
reference, and we hash out our wish list in the scope of work
with the analytical body, and then that gets turned over to
SEDAR, who transforms it into terms of reference. Then the SSC
-- That's like the final thing that the SSC approves before the
assessment officially begins.

Again, in the case of what you guys are looking at, I have
structured the scope of work as terms of reference, to try to
make that whole process a little more seamless, so that what
you're seeing will be similar to what you have already approved,
and it should be very easy to identify any subsequent changes
between the scope of work and the terms of reference.

In this particular case, with hogfish, staff have already
discussed the content of this scope of work with the analytical
body, and everything that's been identified and changed has been
agreed to by the analytical body, and so, really, at this point,
it's if you guys have any other changes that you would like to
see made.

CHAIRMAN POWERS: Thank you. That clarifies it for me anyway.
Are there any other comments about this? Bob.

MR. GILL: Thank you, Mr. Chairman. I only have one question,
and the scope of work is the title of the document, but each of
the workshops are listed as terms of reference, and so my
thinking is what we really have here is a TOR for all three
workshops, and is that what a scope of work is? Why the
difference?

MR. RINDONE: I have listed them like that so that, when it
becomes terms of reference, if there is anything that changes
between its approval as a scope of work and its submission to
you guys for approval as the actual terms of reference, it will
be easy for you to identify, because this is the format that
we've been using for several years now, and everyone is familiar
with where certain things should appear, and I thought that it
would make it easier.

MR. GILL: Thank you.

CHAIRMAN POWERS: Thank you. Doug.

MR. GREGORY: Shouldn't we be at the point where these terms of
reference are simply a template and we ask the same thing for
every species, with the exception of some species-particular
items that crop up? I mean, it's like -- There shouldn't be
three pages of particular items for a single species.
MR. RINDONE: They largely are, but it’s a recipe, and, like Dave Chagaris had said, the data environment is constantly evolving beneath our feet, and so we go ahead and we put everything on there, because it’s just electrons, and it’s not killing anything, and it provides a thorough template for the analytical body to move through to make sure that all the I’s are dotted and the T’s are crossed, and, if there’s anything that comes up, we’ve been meticulous about our planning, and hopefully nothing falls through the cracks.

CHAIRMAN POWERS: Thank you. Are there any other comments on this? If not, moving on then to the schedule.

DISCUSSION OF THE GULF SEDAR ASSESSMENT SCHEDULE

MR. RINDONE: All right. Thank you, sir. This is our SEDAR schedule that you guys have in front of you. Obviously, we’re in 2019, and so there are no projected changes possible there. The king mackerel update assessment is -- Well, I will start from the top.

Triggerfish is underway, and you got an update about that a little bit earlier, and red grouper is finished, and you guys will review that at your next meeting in September. The scamp research track is underway, and it’s in the stock identification process right now, and we haven’t begun vermilion snapper just yet or cobia, and the FWC is working hard on yellowtail, and the HMS branch of NMFS is working hard on king mackerel, and we’ve had a couple of data calls about king mackerel so far. Any questions on 2019?

MR. GREGORY: So we can expect to see king mackerel at our January meeting?

MR. RINDONE: No. It’s probably going to be your March or subsequent meeting, and I’ve been trying to get all the data together, and it has pushed it back a couple of months, and so, originally, it was projected to be delivered at the end of December of 2019, but they have had to since revise that back a little bit. Any other questions on 2019?

2020, which, again, is fixed, and vermilion snapper will finish up, and cobia will be completed, and we will begin our operational assessments for greater amberjack and gag, both of which have approved scopes of work, and the research track for scamp trudges along, and we have a benchmark assessment for mutton snapper scheduled with FWC to begin at the end of 2020.
MS. NEER: Ryan, I was just going to say that mutton is probably not actually going to begin until early 2021, given the other data requirements and my discussions with them during yellowtail, and I forgot to update you on that, and so mutton won’t start until 2021.

MR. RINDONE: All right. Thank you, Julie. Any other questions about 2020? Seeing none, 2021. We will finish up our operational assessments for greater amberjack and gag, and just a side note about those is we have requested an in-person workshop as a component of the gag operational assessment, but not the greater amberjack one, and that’s just because of the difference in data available for those two species, and there’s a lot more that becomes available and a lot more analyses into things like red tide, et cetera, for gag, and the data for greater amberjack are -- It’s really going to follow more of an update template than anything else.

2021, scamp trudges along and finishes up its research track component, and we are looking to begin a red snapper research track in 2021, and we have our operational assessment for scamp, which is where we got our management advice, and so the -- You will notice that, for the research tracks, we don’t have a terminal year listed, and that’s because the terminal year is not as critical for the research track, and it’s more to try and build the car and not decide necessarily how far you’re going to drive it, and so the latter is determined with the operational assessment, and then we have our gray snapper operational assessment that we’ve requested for 2021 also, but we don’t have a defined or a theoretical even start date for that one yet.

Then, as Julie mentioned, mutton snapper looks like it will begin in Q1 of 2021, or somewhere thereabouts, and conclude later. Any questions on 2021?

2022, we will finish up our operational assessment for scamp, and we will get our management advice from that. We will trudge along with our red snapper research track, and we will finish up gray snapper, and we’ve listed on here red grouper and red drum research tracks for 2022, and, obviously, having three research tracks going on at the same time is probably the heaviest of heavy lifts, but this is deeper into the proposed part of the schedule, and, as we stated yesterday, or somebody had asked and I clarified, for this assessment to have any chance, it depends very much so on the completion of the studies in the eastern and northern Gulf of Mexico with respect to the offshore spawning populations and sampling those to be able to develop age and length composition data for those portions of the population.
We can think of the red drum one as being surrounded by a circle of question-marks right now, but, red grouper, given what we’ve dealt with with red grouper in recent history, without you guys having seen the latest and greatest stock assessment, we have that one on there, in case there is some frame-off restoration needed for that one, and then we have the aforementioned benchmark assessment for west Florida hogfish starting the beginning of 2022 and ending later that year.

Then, if we move into 2023, you see the cleanup effort for everything else that’s listed previously. The important things to remember is that 2019 and 2020 are going to happen, and those are happening. Those are scheduled, with the caveat about mutton, and 2021 should, for the most part, be looked at as those things are also happening at this point, because we’re well into 2019, obviously, and, in 2022 and beyond, there is definitely some flexibility in scheduling, and so, if there are things that you guys would like to recommend to the council, as far as modifications, those are really the areas to do it. Any thoughts? Just tell Carrie she’s doing a great job negotiating with the Steering Committee?

CHAIRMAN POWERS: Carrie, are you raising your hand?

EXECUTIVE DIRECTOR SIMMONS: Based on what happened earlier, or yesterday, and it’s blending together, for black grouper, yellowedge grouper, and tilefish, and I think we have talked about this at various times over the last couple of years, and I think we want to see them move forward, but we’re just not really sure where they belong and what we need to do to make them successful, and so we’ll continue to have some conversations with the Science Center and FWC about that, but that’s definitely on our radar.

CHAIRMAN POWERS: Thank you. Okay. You’re basically noting that?

MR. RINDONE: Yes. Noted.

CHAIRMAN POWERS: All right. Are there other discussions about this? Thank you, Ryan. That will move us on to explosive removals. What we have here is a presentation by Dr. Gallaway about the process of removal of structures and some interesting aspects of that, including how many of them actually occur, and so, with that, I will give the floor to Benny, and we’ll go from there.
EXPLOSIVE REMOVAL OF STRUCTURES: FISHERIES IMPACT ASSESSMENT

DR. GALLAWAY: Thank you, Mr. Chairman. I am listed as the presenter of this study, and I will be presenting it, but I also have, in support of this presentation, Dr. Scott Raborn, who is sitting in the back, and he will be available to answer any questions you might have on the detailed modeling efforts that went into the study.

I would like to start with the cover page, and I won’t digress too much, because it’s a pretty long presentation anyway, but the first offshore oil and gas platform in the Gulf of Mexico occurred off of Louisiana in about 1947, and, since that time, there was explosion in installations, moving further and further out into the Gulf, as more and more oil was discovered.

That, as you might imagine, caused a great deal of consternation with the fisheries, who were concerned about their operations being impacted by the presence of these structures, and so, very early on, it was negotiated that, without equivocation, at the end of the useful life of one of these platforms, they would be removed, no questions asked. That regulation holds until today, with one caveat that, if it’s accepted as a donation for a state artificial reef program, it can be reefed in a designated artificial reef site.

Most of these platforms are removed using explosives, and, as you see, the left-hand panel on the cover, that’s a stream of fish wafting away from a platform following these explosions. They put explosions on the legs of the pipes, fifteen feet below the mud line, and sever the pipes, and then they remove the top, and, as you can see in the right-hand panel, they use barges to transport the structures back to town.

The study that we conducted was funded by the U.S. Department of Interior, Bureau of Ocean Energy Management, or BOEM, as well as their sister organization, the Bureau of Safety and Environmental Enforcement, BSEE. Most of us know those as what used to be MMS, and so this is the new version of MMS, and it was an environmental studies program.

In early 2016, BOEM perceived a need that they needed to do an updated estimate of the potential impacts of Gulf of Mexico fisheries due to the explosive decommissioning of these platforms. They were coming out at a very rapid rate. Incidentally, they got up to about 4,000 of these structures in the Gulf of Mexico by the mid-1990s, is what the magnitude was.
By June, they awarded a contract, and we were the lucky, or unlucky, beneficiary of that contract to do the study, and the study's focus was defined for us, and it was the federal waters in the Gulf of Mexico and what they call their western and central planning areas, essentially from the limit of state waters out to a depth of 300 meters, and so that extends from basically Alabama to Texas, is their central planning area.

This is just to give you what it looks like now, and the number of structures is down to about 1,200, and you can see a table on the right, and that gives you the number of standing platforms that are still out there by state, and, as you can see in 2017, there was 1,216, of which 75 percent were in Louisiana. If you look at the map, most of these platforms are located in offshore Louisiana.

The lines that you see there, I have tried to put it in something that might be more meaningful to this group, and those are the red snapper state management area boundaries that have been -- I hope that I have got them reproduced. The color depth assemblages are classifications of the bottom depth by assemblage structure associated with these platforms, based on the literature and historical study.

To give you some idea how they are coming out, this shows the number of platforms each year, beginning in 2000 and extending to 2018, and it's color coded to show the number of platforms that were present in each of the depth zones that I have described, and it's ten to seventeen meters, eighteen thirty, thirty-one to ninety, and ninety-one to 300, is how the depth zones fell off, based on biological assemblages associated with these platforms.

The number at the top of the bar represents the number of platforms that were removed each year, and various numbers of those were moved using explosives. There are several techniques that are now in play for removing them, but roughly 40 to 50 percent are still being removed using explosives.

The study objectives that we had was to characterize the relative abundance and distribution of commercially and/or recreationally-valuable federally-managed species within the lethal blast radius of explosive severance charges used during the decommissioning process, and we were to develop a technique to estimate or model species-specific mortality of managed fish species due to these explosive severance activities, incorporating factors such as severance methods and environmental variables.
We were to compare our study results with mortality estimates currently used in fisheries management plans or recent stock assessments, and the goal is to take these numbers and ultimately enter them into the stock assessment and see if it makes a difference in the population. Then BOEM wanted us to recommend to them how they could minimize their impact to the fisheries, should they occur.

Our team was a pretty diverse team, and I was fortunate enough to get to serve as the program manager, and Brad Erisman was our hydroacoustics principal investigator from the University of Texas, and his primary assistant was Jack Egerton, Dr. Jack Egerton, who was doing a post-doc for the hydroacoustics.

Stephen Szedlymayer was our acoustic tagging and telemetry PI, and Katherine Kim is our shockwave propagation and mortality PI, and Scott Raborn was our project biostatistician. We have Bill Gazey, who many of you know, who will help us running the stock assessment, and then one of the things that we did in this project that was different from most projects is we worked closely with the charter/for-hire industry in providing all of our logistics.

What we found was they were nimble, and they were big enough and capable enough that they could catch fish, which many scientists seem to have a hard time doing, but so we contracted the charter industry as citizen scientists to provide the logistic support.

We also spent a lot of time in planning, and we met with Chris Taylor and his lab for hydroacoustic advice and trying to incorporate the most recent methods and methods that would be consistent with other kinds of programs that were going on in the Gulf of Mexico.

We had another aspect to our study that is perhaps not common, and we had a formal peer review group, and the peer review group consisted of Gregg Gitschlag, who is with the NMFS Laboratory in Galveston, and Gregg has personally attended every explosive removal of platforms in the Gulf of Mexico, Gregg or his staff, and I think he personally has.

DR. NANCE: No.

DR. GALLAWAY: Did he miss one?

DR. NANCE: Well, his staff for sure, but Gregg has overseen the platform program in Galveston since its inception in the 1980s,
and he has been on or overseen platform that has been removed with observers.

**DR. GALLAWAY:** So he has overseen our work in that area. For stock assessment advice, we’re using Dr. John Walter, who I’m sure most of you know, and then, since most of these were in Louisiana, for our platform ecology, we used Dr. Ed Chesney with LUMCON, who is well known for doing platform studies, and those were our peer review group. Every major document that we produced went through them for advice and review.

The first task that we did was do a comprehensive literature synthesis, and this is the current literature describing everything we could find about the federally-managed species and their biology and their distribution, et cetera, everything that we could find out about petroleum platform ecology, what the assemblages were, the updates on the assemblages, where we had a good working background, and that literature synthesis ended up in a big database, which will be available at the end of the study, should you want to have access to it.

That distribution, or that set of information, enabled us to do a stratified random sampling program, where we could pick out platforms relative to pertinent strata that had some meaning, and that helped us establish our primary field design, and the field studies were restricted to May through October period of 2017 and 2018, and we were restricted to a total of thirty platforms each year.

Our literature synthesis list, we can up with thirty-nine managed species that you see listed in this table, and you don’t have to read them all. Of those, the literature documented at least twenty-five of those species occurred on platforms, and we reviewed those twenty-five for ones that had a detailed comprehensive stock assessment, and there was nine of them, and we selected five to be our study species focus, and they were cobia, gray triggerfish, greater amberjack, red snapper, and vermilion snapper, and those aren’t necessarily in the order of abundance.

Thirty platforms are shown in this slide, and, like I said, they were randomly selected based on the distribution of platforms and assemblages, et cetera, and so we feel like we have a randomly selected sample that we can use to extrapolate the totals from platforms within that depth zone with a minimum of bias, or at least that’s our hope.

The primary workhorse of the project, our primary way of
counting fish, was hydroacoustic surveys complemented with submersible rotating video cameras, and that was used to estimate the total number of fish present and the species composition of fish at all sixty sites.

In addition to hydroacoustic surveys, as synoptically as possible within a few days, we also conducted hook-and-line sampling at all of the sites, and fish were -- We took independent SRV surveys and water quality profiles, and so we had multiple SRV luring at a site, along with multiple observations of water quality.

Fish that were collected were identified to species and sex and weighed and measured, and the otoliths were extracted. We felt it was important, and we did the dockside processing on the same day that the samples were collected, which, at a subset of ten of the thirty platforms per year, we did experimental mark-recapture studies to obtain independent population estimates.

You always have a real question of are you allocating the species properly, are you counting them right, and are you allocating them to species properly, and so that allowed us to use the mark-recapture studies to go with this, at for red snapper, and see what we came up with.

In addition to mark-recapture studies, we conducted acoustic telemetry studies at a subset of thirty of these platforms, and it’s a big question of do these red snapper, which was our focal species, do they hang around platforms, do they come and go, do they stay there forever, et cetera, and so we set out an array of receivers and acoustically-tagged fish, so we can track individual fish over time, and, like I said, it was a subset of seven sites. Again, every time we took a collection, we took a vertical profile of the water quality conditions at that site.

Our analytical methods, if you looked at the presentation, you know that it’s about twenty pages of material, supplemental material, at the back that cover -- The modeling gets pretty complex, and I wanted to just give a brief overview of our analytical approach here. If we want to go into questions about it, we can do that at the end of the presentation.

We have just finished our assemblage characterization report, which describes the hydroacoustic and SRV surveys, what’s present and where are they located around platforms and how long do they stay there, and that program has been published, and I have shared that, with the permission of the sponsor, with Dr. Stunz, so that we can start, as much as possible, integrating
the results from the, quote, unquote, Great Red Snapper Count
Study with this one.

We modeled assemblage structure and total fish abundance
separately using the SRV and hydroacoustic data for each bottom
depth zone that you saw earlier, those colored bands, and
vertical layer within that vertical band. For those
combinations, we made predictions from both models and then
combined those to provide species abundance levels, complete
with confidence intervals.

We also give species abundance levels for what we predicted an
average platform within each of those depth zones, and that may
raise some question of, given all the variabilities that can
occur, does an average platform really exist, rather than the
average of specific sites?

Our estimates may not apply specifically to any single platform
that we looked at within a depth realm, but we argue that, all
things considered, given the random sampling, et cetera, that we
have an unbiased basis for projecting our abundance estimates to
the total set of platforms within that area. Like I said, the
detailed methods are in the report, which will soon be
available, and I have provided detail in the supplemental
materials, and Scott is here to answer questions that you might
have.

The findings of the program is in a complex table that I don’t
expect you to read every line, but this is for your information
later, and the yellow highlighted -- I don’t know what color
that is, but mine is yellow, but the highlighted species are the
five focal species, and, if you look, we documented thirty-six
total species in our study, and keep in mind that we’re not
swimming among the platforms, and we’re not counting gobies and
this sort of thing, but we’re just doing the big fish with SRV
counts.

We documented thirty-six species in total at the site, and then
the columns there represent the four depth zones, the ten to
seventeen, eighteen to thirty, et cetera, and the highlights are
the highlighted species, the focal species, and then, down at
the bottom, you see the total numbers at each platform.

The shallow platforms, the ten to seventeen, we have like 8,000.
When you move out deeper, you get 15,000, 15,000 or 16,000, out
to about a hundred meters, and then you get another jump in
abundance, which we are all of a sudden starting to be unable to
identify a lot of them, because they are large schools of
baitfish moving around the platform that aren’t really easy to identify.

At each site, we got something like nearshore was seven species, twenty-six species, thirty-two, and thirteen on the deepest. The model, it models abundance at a platform, and it thinks that everything can occur at the platform, and, sure, you would expect that, if you go to a platform on any given day, there might be a species that you didn’t see on that day that would be expected to occur there, and so the model predicts those, and it also predicts everything else that might occur there, a lot of them that you wouldn’t expect to be there, but, if you look at those, we were very pleased with how this came out, because those are very small numbers, or trace numbers, just like you would expect, and, if you looked at the ones that actually occurred, they accounted for usually 98 percent of the biomass, and so we were very happy with our model results.

On the distributions around the platforms, we found a close association from the hydroacoustic data, and abundance decayed with distance from the platform, as you see represented in this graphic, and the platforms harbored significant reef resources, including particularly red snapper, vermilion snapper, greater amberjack, cobia, and a lot of other species that you see in the pictures, and that’s our minimum size gray triggerfish in that right-hand panel there, and I forget how much it is, but it’s a big one, and it’s about 500 millimeters, I think.

In this presentation, I am going to specifically run over red snapper and greater amberjack. In the supplemental materials, I have the data for the other species that we focused on. For red snapper, this is just some action shots. If you look at our population estimates for depth zones using hydroacoustics and compare those to the individual population estimates, if you look at that center depth zone of eighteen to thirty, where most of our population estimates -- Our population estimates, a median value across all the estimates, was like 1,166 red snapper present at an average platform within that range.

If you look at the average, the actual average, based on the population estimates, we got 1,015, and so we missed it by 150 fish or so, which we were quite happy with that graphic, and that is -- We like it.

The population method, we followed a Bayesian approach that was patterned after Gazey and Staley published in Ecology in 1986. Using this approach, you set feasible population bounds, and it can’t be less than the number you tagged, and it can’t be over
ten million. You can put bounds on it, and then, given your
mark-recapture data, from having that, you can calculate an
exact probability for each population size within that bound.

Not only do you get a confidence interval, but you get a
probability distribution for each interval, and that method
doesn’t seem to have caught on a lot in the peer-reviewed
literature, but is an Ecology publication, and it’s a good
method.

Here on the left, you see that we got good returns on our
marking, and you can see like a population with a small size,
very tight confidence intervals, and even on a large population
size it’s fairly reasonable, and so we’re comfortable with that.

We tagged seventy-one red snapper with acoustic tags and
released at three sites, one over in Alabama and two offshore
Louisiana, and those were all in the eighteen to thirty-meter
depth zone. Like I said, there was an array, and we had an
acoustic transmitting tags, and we had receivers all around the
platform, such that we could monitor the distribution of
individual fish.

After tagging, and we’re catching these fish and fighting them,
and they’re exhausted, and we anesthetized them, and we
internally implant the transmitter, and then we put an anchor
tag, and so it’s pretty tough on the fish, and so we gave them
six days for a recovery period, which that’s based on Dr.
Szedlmayer’s trial and error, and he feels that’s adequate, and
so, after six days, we start tracking them.

You get a graph that looks something like this, and the black
bars represent the activity and presence of the fish at that
particular site, and, when you’re able to look at it where you
can see it, you will see that the individual fish number is
listed on the left, and you see what happened to that fish
during the course of the study.

A total of eleven of the fifty-nine fish that survived marking
permanently immigrated following residency of a site, up to
thirty-three to over a year at the site. For some reason, they
left during that period and didn’t come back.

We had twenty-four fish, and you see some gaps, a lot of little
gaps and then big wide gaps in the distributions, and twenty-
four fish exhibiting homing behavior, leaving and returning to
the sites following absences of three to 184 days, and so they
do move, and some -- One, the very bottom one at the bottom of
the graph, which was a very large fish, was marked in the early
spring of 2017, and this record goes through the spring of 2018,
and that fish is still there, and that’s at a site in nearshore
Alabama, and you can see high-rise condominiums off in the
distance, and it’s heavily fished, and no one has caught that
fish, or landed that fish, again, and so he’s still there, and,
if you don’t think that Steve doesn’t give me a hard time about
my premise that, when fish get older, that they leave the
protection -- They’re not dependent on reefs and they go, and
here’s one on the beach that stayed at a platform for three
years, and I will never live it down.

The fish that were tagged typically remained in close proximity
to the platform, and the mean distance was like twenty-eight
meters, and we had something like 879,000 good location records.
About 10 percent of these fish, at any given time, were under
the platforms, and 84 percent were within 95 meters of the
platform, and six were more than 95 meters, and so, again, that
backed up our hydroacoustic surveys that there is close
proximity.

This gives you a little bit of distribution, and it’s the same
data plotted in a slightly different way. The frequency of
fish, you can see the big spikes on the bottom, and that’s that
the fish were right around the platform, and the circles of dots
here are individual fish, their home ranges around the platform,
and they stay -- When they’re at the platforms, they stay at the
platforms, and we do have them on video feeding on Atlantic
bumper and things like that, and so there is some trophic
interactions, although that was not a goal of our study.

Using this approach, there is a known fate model in the MARK
Program, and I don’t know if you all are familiar with that, but
it’s a program for dealing with these kinds of data, and that
was developed at Colorado State University by White, and you can
use that data, or that model, to estimate fishing mortality,
natural mortality, and total mortality.

Then these shallow platforms, I think something jumped out at
us, because that’s F equals 0.86, and so these shallow platforms
are heavily fished, and the natural mortality rate was estimated
to be right in line, I think, with the stock assessment
estimate, and I think that’s close, and, of course, total
mortality was high, because of fishing mortality.

If we look now at the total abundance of red snapper on
platforms in 2017, this shows abundance by depth zone by state,
and the orange bars is the State of Louisiana, and the depth
zones are ten to seventeen and so forth, and I hope you can see those, and, if you look there, in Louisiana, there is about a million red snapper on platforms within the thirty-one to ninety depth zone.

In 2018, platforms had been removed, and so those numbers are dropping by the specified amount. In 2017, the biomass of those million or so red snapper on the Louisiana program was like six-million pounds on platforms alone in the Louisiana management area, and that’s where a lot of the fish in the recreational sector are harvested, and they can find those.

Here, I have done red snapper total abundance on platforms Gulf-wide, and, again, you see that there’s a high skew, or the data suggests high abundance in the thirty-one to ninety depth range, and you see, in 2017 and 2018, the declines in the confidence intervals, and, on the biomass, which is the lower panel, in 2017, I thought that was interesting, because the biomass on Gulf platforms in 2018 was 9.12 million pounds, and that number should ring a bell for many of you.

That was the total TAC for red snapper for many, many, many years, and so that’s a lot of red snapper on Louisiana platforms, but we also used the most recent stock assessment for the basis for comparing for each species, and so, really, proportionally, that’s not a lot of the red snapper stock on platforms in general. The left panel is about 4.9 percent of the stock, of the red snapper stock, occurred on platforms, and, since most of them are in Louisiana, I felt that it was important that it was about 3.7 percent of the total red snapper occurs on platforms in Louisiana.

As an aside, our peer reviewer, Dr. Chesney, has studied extensively shallow-water platforms, and, if you blow these pictures up, when you get a chance, you will see that those nearshore shallow platforms are just swarming with age-zero and age-one red snapper.

Now I will move to amberjack, and the thing that impressed us was in the western Gulf of Mexico, and the amberjack on offshore petroleum platforms are large. We did not see many small amberjacks at all, and this is not an atypical photograph. If you catch an amberjack out there, it’s going to be a large amberjack.

Here is the same distribution again, showing amberjack by state and depth zone for 2017 in the top panel and 2018 in the bottom panel. Again, you are looking at on the order of 200,000
amberjack, and that doesn’t sound like many compared to red
snapper, but we’ll get a context for that in a few minutes.

If we look at total amberjack on platforms, you get numbers kind
of like this. You get up around 250,000 amberjack on platforms,
most of which are off of Louisiana and west of the mouth of the
river for the most part, and, not surprisingly, but an
observation is you look at that, what proportion of the total
numbers in the stock assessment do they represent, and it’s like
45 percent of the total amberjack population appear to be -- If
both sets of numbers are correct, that would be the proportions,
and I urge you that I suspect that you might want to re-examine
your amberjack stock assessment for total numbers. I suspect
it’s a bit low, and I have some reasons for why that might
occur, but it’s pure speculation, and so I won’t present it to
the SSC. I will present it to my political friends.

What came across to me, and this is where I’m going to get in
trouble, but I’m going to feel very strongly about it. You saw
that most of the platforms are in western Louisiana, and are the
federally-managed fish resources of western Louisiana at risk,
due to taking out these platforms?

Well, we’ll go into that in a minute, but, before I say anything
else, because I know our other team, Mark Belter, who works for
BOEM and is my client, is probably listening, and so I want to
make sure that I give you these caveats. What I’m about to say
is I’m going to give you some of my preliminary thoughts, and
it’s mine and my company’s alone. BOEM’s official position is
it remains in line with the Offshore Lands Act and assumes that
all OCS facilitates are temporary and must be removed at the end
of life, unless a waiver is granted.

Therefore, and this was interesting to me, platforms, pipelines,
et cetera, are really not considered habitat in the same sense
as live bottom and are managed differently. They are
artificial. However, BOEM funding this study, I think, does
highlight the agency’s recognition of the presence and
importance of the fish resources around these facilities, and
this study is intended to help BOEM and BSEE evaluate potential
impacts of decommissioning activities and come up with better
management decisions. At this time though, BOEM has not
indicated a change in direction or recommendation, and, since
the study is not complete, I am not going to go into a lot of
detail on what I think. I’m going to give you some rationale.

First of all, I would like to review where the platforms are,
and you can see there that 75 percent are off of western
Louisiana. The importance of those habitats depends on what other reef fish habitat is there and what other aggregation points are there.

If you look at the natural bottoms, and this is the U.S. Seabed Database, which has been used in several assessments, and the bottoms are mostly mud or sand bottoms, with a few natural banks and some shelf-edge banks and really not much else, in the way of artificial reefs.

Louisiana has been proactive, and they have reefed some 368 of these platforms, and so there are those platforms, and I may point out to you also that there are hundreds, thousands, of kilometers of pipeline corridors and pipeline crossings, which may also contribute habitat, but, again, those are artificial habitats.

If you remove all the artificial habitats, and, before I show the next slide, I didn’t get to revise some wording, and I used some words that I wished I hadn’t, because they are hot-button words, and I apologize for it, and so ignore the second bullet until I get to it.

There is a platform being reefed, and I think oil and gas platforms in western Louisiana is a significant proportion of the habitat in their red snapper management area, and their local removal will remove that habitat, and the bottom -- What I wish I had said is, without extensive reefing of the platforms, there is going to be large localized reductions in access to red snapper, and the fishermen won’t be able to find the fish. There is going to be a big impact, in my opinion, on the localized fishery of western Louisiana. On the stock as a whole, no. I did it in less than thirty minutes, didn’t I, Ryan?

MR. RINDONE: I’m proud of you.

CHAIRMAN POWERS: Thank you.

DR. GALLAWAY: I told you I would.

CHAIRMAN POWERS: That’s interesting. One of the things, and you probably alluded to it, but, for the case of red snapper, the size distributions, have you got information about the size or age distribution?

DR. GALLAWAY: We have size and age distributions and length-weight, and we did condition analyses and all of these things,
but, yes, we have size frequency and age frequency information.

CHAIRMAN POWERS: Were they mostly small or mostly big, or was there a wide range?

DR. GALLAWAY: They were mostly three to six. I will get a graphic here, and I have the report. Incidentally, BOEM is willing to make the report available for use. You can’t publish it, and the data are not final, and it’s not approved, but, for information purposes, it’s available. For example, I have the age distribution, and it’s basically from three to five, and you can see the progression going three, four, and five, and it changes by distance offshore. The younger, smaller fish are -- We have all that in the report.

CHAIRMAN POWERS: Yes, and I was just thinking of just sort of a broad-based interpretation of what 4 percent was.

DR. GALLAWAY: They are mainly, like I said, three, four, and five.

CHAIRMAN POWERS: All right. Bob.

MR. GILL: Thank you, Mr. Chairman. Thank you, Benny. That was very interesting, and, of course, this subject has been bouncing around for years, and so it’s even more interesting to see what you’ve done thus far, and so refresh my memory on the timing. Your study is going to complete when, and what is the anticipated time of BOEM’s reaction to the study?

DR. GALLAWAY: Our field studies were completed in 2018, and we had two years of field studies, and we’ve completed our characterization report, which is the one of these are the fish that live there and how many and how big, and that’s all completed.

That information has now -- We have taken all the engineering drawings and all that and have provided it to the guys that are going to blow them up in the model, and we’ve got this many fish around them, and kill them all, and then we’ll get John Walter to plug that into the stock assessment and see the impact.

The explosive effects should be completed sometime early this fall, and I am pushing to have the project completed by the end of the year. I expect that’s optimistic, and we have another year on our contract, but I want to get it done, and so I’m hoping that we’ll be done by the end of the year.
MR. GILL: When you expect a BOEM response if you meet that, a year later?

DR. GALLAWAY: No, BOEM will -- I don’t know what you mean by BOEM response, but they will approve it at the time, and we’ll submit it, and they will review it and either approve or reject it, and I expect they will approve it.

Incidentally, I have got to brag on my staff. BOEM ranks contractors every year, and they have a series of contractors, and it goes from this is terrible to excellent, are the rankings, and, the first year, all of our rankings were very good to excellent. This past year, we’ve gotten all excellent rankings for every category, and so I expect that they will approve this posthaste and it will be available for use by the council, or whoever needs it.

Like I said, we are attempting -- I am interacting with Greg, and we hope to get these studies integrated with the other study that’s ongoing, and there may be a third study initiating this next year, and so there may be more information about red snapper than you ever wanted to know within two years.

CHAIRMAN POWERS: Thank you. I have another question that sort of relates to the right-hand picture. Pretty much everything that’s there gets killed when you do the explosion?

DR. GALLAWAY: It depends on how close, and these explosions are fifteen feet below the mud line, and so you’ve got a layer of mud, and that enters the water, but, usually -- The preliminary assessment of the modelers is they just shake their heads and say this is probably going to get most of them that are there, but what we see -- I think that picture, or the one on my questions slide, that is the second day.

A lot of times, they don’t completely sever with the first round of explosions, and they have to come back the next day or the next day and do some more explosions, and so the fish that weren’t in the lethal blast radius, plus all the predators that are chowing down on the fish on the bottom, get zapped the second or third day.

CHAIRMAN POWERS: Did somebody have a -- Luiz.

DR. BARBIERI: Thank you, Mr. Chairman. Benny, again, great presentation, and that was very informative. I was just wondering, looking at your estimates of red snapper there and how they compare proportionally in the Gulf, the total abundance
of the population in the Gulf in that area, in those structures, and if you looked, and I was trying to look quickly here at that paper that Mandy Karnauskas and colleagues published a few years back that was looking at the distribution on natural habitats and artificial structures in the northern Gulf of Mexico. Their results basically report that less than 14 percent of red snapper abundance could be attributed to those artificial habitats.

DR. GALLAWAY: The oil platforms are, yes, and our results are consistent with that, and, as you know, I had previously, and I think it was back in the 1980s or 1990s, published a paper where I thought the proportion of age-twos might be considerably higher, and I no longer believe that, and the reason for that is the stock assessment, the mortality rates that we were using back then, had indicated that the population size in those days was much larger than what it actually was, based on our new information, and so I was right, but for the wrong reasons, or something like that. It was true then, but it turned out to be based on a false premise as the number of total fish, but that’s about right, I think, somewhere in that range.

CHAIRMAN POWERS: Jim.

DR. NANCE: Thanks, Benny. Gregg did a very similar study, back in the 1990s, I think, and there were not as many platforms, and does your numbers compare with what Gregg got?

DR. GALLAWAY: My numbers compare with what Gregg got in the area that he studied. He was mainly a shallow-water -- If you look at that table and look at the number of red snapper, there are like up to 1,000 say, but, if you get out in that thirty-one to ninety, you’re talking about 3,000 fish per platform, 3,000 big fish, compared to a bunch of small ones.

DR. MICKLE: Benny, I enjoyed the presentation, and my first question is, is this intended -- Although it’s not finished yet, is there an intent for bringing this to the council as an update, such as you’ve brought here, or are you going to wait until the end? I mean, I don’t even know whose call it is, but I’m assuming that it might be in the SSC summary when it’s brought up next month, a brief excerpt, but I can see at least two states, most likely three, that would be very interested in this.

DR. GALLAWAY: In answer to that question, originally, the people who really wanted me to present this was our charter boat colleagues, and they wanted me to present it to the council, and
I said that it’s not done that way, and you go to the SSC, and then you guys determine if the council -- If the SSC has reviewed it and you want a presentation at the council, that’s -- I guess that’s your call, but I have to start at the -- I don’t have to, but I want to start at the SSC level.

DR. MICKLE: Thank you. My last question is I guess directed to NMFS. When the right whale went to listing, did that change anything involving the explosion methods being used, because there are, obviously, alternative methods for removing these structures, and has the new listing of the right whale or any other -- Obviously turtles has changed some permitting processes at NOAA, but there is no status change with the different species of turtles, but, with increased listing of certain things like that, does that impact -- I don’t know if this question is directed to you, Benny.

DR. GALLAWAY: I will defer that to Jim.

DR. MICKLE: I see Roy walking a little closer to a microphone.

DR. CRABTREE: Well, the whale that was recently listed in the Gulf was the Bryde’s whale, and right whales are rare, and most of the Bryde’s whale habitat is in Desoto Canyon and south of that, and so it’s really almost all to the east of where the rigs are, and so I don’t think there would be an impact.

DR. NANCE: I would like to say, although I don’t work for the agency anymore, but the purpose of the platform removal program at Galveston was to help ensure that sea turtles and marine mammals were not impacted by the explosive removal of the platforms, and the reason the observers were out there was to make sure that sea turtles are not in the area during that process and marine mammals are not in the area, and so that’s why the observers are out there. It’s not to monitor fish kills, but it’s to protect sea turtles and marine mammals.

DR. MICKLE: How do they know that, observing, that they’re there or not?

DR. NANCE: They go out a week before the platform removal and monitor and see if any sea turtles are in the area, and they can look for when the sea turtle surfaces or marine mammals surface, and they do helicopter aerial surveys before the explosion, to make sure there’s not any within the impact zone, and so they’ve done great over the years to make sure that those impacts are not happening during the removal process.
CHAIRMAN POWERS: Thank you. This is very -- I think Benny, Dr. Gallaway, was alluding to whether the council would want to deal with this and whether we would, quote, unquote, allow it, and I don’t think -- I don’t have any particular problems, and, in fact, once information goes on the website, it’s there, and you don’t have any choice. It’s like social media.

How the council wants to proceed with this, I have no -- Personally, I don’t have any problems with it, if you want to have a discussion, or even invite Dr. Gallaway or whatever, and I think Luiz can convey that as we go forward.

DR. BARBIERI: Yes, sir.

DR. MICKLE: I am speaking as a council rep, but the SSC’s job is to -- Is this a valid scientific study? Does it meet, I guess, the standards of the SSC as an independent review, and then the council can -- Then it can go to the council, or am I missing something in that?

MR. RINDONE: That’s certainly a valid path forward. I think that this is a considerable body of work that’s been done though, and it’s an update, and what the council might consider is how they want to receive this information, if they want it to be a part of the presentations they receive during the Full Council session. Given the length of the presentation and the amount of area it covers and the importance of the topic, maybe something like that might be appropriate as a jumping-off point, as opposed to having it as a component of the SSC report, and so that’s just a consideration.

CHAIRMAN POWERS: I think we leave the option, and I was sort of -- Given what I already knew about platform removals, because I actually did a -- I was one of Gregg Gitschlag’s co-authors some time ago, but I was trying to remember what the results we had were, and that’s one of the things that -- Having seen this, I was planning to go back and start comparing things, and also just because of my interest in stuff in the Gazey approach, and I would want to familiarize myself with what’s going on there, but, beyond that, I personally don’t have any worries about the study itself, but, of course, it was also just presented to us, and so --

DR. GALLAWAY: If I can, Gregg’s results and you all’s analysis and the assessment of those results were bang-on for that depth zone, and, as you move out deeper, you get different results, but, given the proportions of fish involved, I am not sure -- I don’t know what the answer is yet.
CHAIRMAN POWERS: Okay. Is that enough guidance for Luiz to go to the meeting?

MR. MATENS: If I may, Joe, it’s probably not a surprise here that this is of great interest to those of us that live in Louisiana, and the fact that are fish are killed is one issue, and that’s a different issue.

From our standpoint, how do we replace the habitat, and, if it’s not a floater, if it’s a rig that goes to the bottom, if it’s in water deeper than 150 or 200 feet, it can be cut off at ninety feet, according to the Coast Guard regulations, and so we keep the habitat, but the rig is gone. Now, you can argue that the vertical distribution of fish changes.

For rigs that are shallower than that, you’re supposed to take the whole rig out, and we have locations where we can reef these unused rigs, but, when you’re towing this rig, you can tow it about a knot or a knot-and-a-half, and, in many cases, it’s cheaper for the company to take them to town and scrap them and salvage them.

We have a program to try to replace some of those, and the oil companies will work with us, but what do you do about rigs that are in forty feet of water, or fifty feet of water, or thirty feet of water, which the people can reach with smaller boats, and that’s more activity that we are interested in, and so we are siting sites where we can put structure on the bottom, limestone, about three or four feet off the bottom and cause that habitat to be replaced, if that’s the right choice of words, and we work very closely with the shrimp industry to try to not add to their problems.

They were avoiding those rigs anyway, and we have 100 sites sited right now, ready for permits, and we’re going to utilize them, and so we hope that we can keep our fishery, and I think that we can, and it’s expensive, and we have a lot of people that are interested in helping us financially, companies and individuals. If you want to have the Joe Powers Artificial Reef, for $100,000, God bless you, and we can put you on it, or you can get ten friends. You can have the Joe Powers Family Reef. Thank you. I couldn’t resist. Thank you.

CHAIRMAN POWERS: That’s out of my price range. Sorry. Doug.

MR. GREGORY: Benny, I assume that this is going to go to try to be factored into an assessment, not only the mortality from the
removals, but I would imagine the mortality from the fishing
effort, or the fishing mortality, that was estimated at
different depth zones, and you only presented the shallow water,
and I presume it’s less mortality in the deeper water, but an F
of 0.86 is pretty significant, and it would be interesting to
see if, given the number of rigs, how that translates into
overall F, and it’s probably very minor, but it will be curious.

Just as a side note, back when I worked for the council before,
I had proposed that there be, and we were trying to protect red
snapper, that there be no fishing within 100 feet of an oil rig,
and I barely lived through it.

CHAIRMAN POWERS: Well, as Benny alluded to, and I would suspect
that, once you have this information together, there is a number
of different ways it could get integrated into the assessment,
and clearly it would be useful.

DR. LORENZEN: It seems to me that your fishing mortality rate
is not strictly a fishing mortality rate. It’s sort of a
recapture rate, probably, right, and so this is how they are
recaptured in -- Those would be discarded and survive.

DR. GALLAWAY: Supposedly it’s F, based on that dataset, and I
would have to -- I don’t have the program MARK with me, and I
don’t have it in the supplemental materials, but it’s supposedly
an estimate of F for that situation, and I will show you the
model, and I’ve got the reference in the paper, and you can go
to that and see what’s in there, and the data that fed it is in
that chart, and so you can reproduce the analysis and see what
it is, if it’s not F, but I’m pretty sure it is.

CHAIRMAN POWERS: All right.

DR. GALLAWAY: Our plan is that, once we get the results from
our shockwave modeling people, once we get the mortality
estimates, and we have a size distribution, age distribution,
and biomass, and then we will -- I was planning on trying to --
Make Shannon leave the room, and hopefully John would get
someone to plug those numbers in, just like you and Gregg did,
and rerun the analysis with those sets of data, and we’re doing
-- We’re going to do the effects of removing the ones that were
removed in 2017 and 2018, and that corresponds with our data,
and then we’re going to do various future scenarios of how many
platforms were removed within 100 miles of fishing ports, and
we’re going to do several with different scenarios in our
mortality estimates, and so we still have lots of work to do.
MR. RINDONE: This is just to expand on that a little bit. Back in SEDAR 31, one of our former staff members who has moved on to other things, Mark Mueller, had worked on compiling all of the available artificial and hard-bottom reef data that were publicly available in the Gulf and quantified the spatial extent of those artificial and hard-bottom areas, and they were -- That was considered as part of trying to determine the impact of rig removals on the red snapper population, and it was part of the SEDAR 31 assessment, and that was using data through 2011 at the time.

What came out of the assessment was that the effect of the mortality on the species, due to the removals, didn’t -- It wasn’t significant, in terms of its effect on the assessment and total biomass, but new information, more data, more years, it’s always worth taking another look at.

DR. GALLAWAY: In response to that, we have those coverages, and we have all the artificial reefs, and we have shipwreck coverages, and we have all the pipeline and pipeline crossing coverages, and one of the things that we’re -- Another set of coverage that I think is important is we have all the shrimp trawl electronic logbook data, and that records the position of a shrimp boat while at sea every ten minutes, and so, if you plot those out, and you combine them all, you end up with a black map, and it’s just covered with black dots, except you see a whole bunch of little white circle areas, or white areas.

Most of those, or some of those, you can relate to things like the platforms or artificial reefs or shipwrecks, and we’re assigning all of those, and then there was a high proportion of those, especially in the north-central Gulf of Mexico and eastern Texas and western Louisiana, that corresponds to one of Mandy’s estimates of proportion of the stock location, and so there is another set of data out there that defines, may define, habitats that aren’t being recorded, and it may change our views as to the base distribution of red snapper in the Gulf of Mexico, and so you all know that I will go in crazy directions, but just to give you a warning.

DISCUSSION OF ALMACO JACK LIFE HISTORY AND LANDINGS

CHAIRMAN POWERS: Okay. Thank you. The next agenda item is almaco jack life history, and Dr. Mendez-Ferrer is presenting this information. I was retold here, and I think I was told before, and I just forgot, that this has actually been requested by the council, this information as well, and so this is a response to them, but, in the same respect, as indicated before,
we should go through this process. Lee.

**DR. ANDERSON:** Without being rude, can I ask why the council asked for this? Are they considering management for it? I am completely in the dark, and I would like some background.

**CHAIRMAN POWERS:** John.

**DR. FROESCHKE:** I think the council has received some information about the species is being targeted perhaps more than it has historically in the past, and I think maybe it’s FWC or something that is considering regulations and things, and they are considering if perhaps we should do more than we’re doing now.

**DR. ANDERSON:** Thank you for that.

**CHAIRMAN POWERS:** Is there species ID issues with amberjack too, or let’s get on to the talk, and probably this answers everything.

**DR. NATASHA MENDEZ-FERRER:** I will go over all of that. Thank you. My name is Natasha Mendez-Ferrer, and I just started working with the council as of like two months ago, and so, like it was mentioned, during the last council meeting in June, the council requested some feedback from the SSC, given the new regulations that are coming out for the almaco jack fishery.

The South Atlantic Council approved the establishment of a twenty-inch minimum size limit, fork length, for the commercial fisheries, and, as of July 1, the State of Florida also implemented commensurate regulations for commercial fisheries of almaco jack in Atlantic state waters.

The document that I shared with you has a summary of the life history and the current regulations of almaco jack, as well as some recent landings, so that we can compare what we’re seeing. Almaco jack is, like we have mentioned, there are some issues with species identification, and it’s a species that looks very similar to amberjack, and it has a slightly more compressed body, and a way to identify it also is by the length of their dorsal fin, which tends to be longer in this species. Their coloration can be silvery, and it can be kind of a bluish or an olive green, as you can see in the photos in the document. Juveniles have five to six well defined dark bars that extend from the dorsal fin to the anal fin.

Almaco jack is actually a species that can be found globally,
and it’s been reported in the western Atlantic waters, from
Massachusetts, including the Gulf of Mexico, Caribbean Sea, all
the way down to Argentina, and also in the Pacific, as well as
in the Indo-West Pacific Ocean.

The species mostly occurs offshore, and they are generally found
in nearshore waters, and common sizes for adult almaco jacks
have been reported to be twenty-two to thirty-five inches fork
length, but some of them have been reported to be forty-five
inches fork length. The larger ones that I’ve seen in the
literature have been mostly reported in the Pacific Ocean.

Almaco jack is one of those data-limited species, and we don’t
really know much about their life history and spawning behavior,
as it was highlighted in the SEDAR 49 in 2006, as well as in the
five-year review of the essential fish habitat done by the Gulf
Council in the same year.

Right now, based on similar assumptions made for other Seriola
species, the almaco jack stock in the Gulf is considered to be a
single stock, and let me show you the -- This image was actually
extracted from the five-year EFH review, and, in that document,
you can see kind of a species profile that was developed for
almaco jack, and so that kind of maroon color and polygons that
you can see in this map are associated to benthic habitat where
almaco jack have been reported, and this can be hard bottom as
well as oil platforms and other artificial structures.

To kind of give you an idea, based on juvenile studies, it’s
assumed that almaco jacks spawn in the spring and summer months,
and the juveniles -- The eggs and larvae are mostly pelagic, and
the juveniles tend to be closely associated with sargassum, and
they have been reported along the Florida Keys as well as the
Panhandle area of Florida, and almaco jack eggs have also been
reported near the Texas-Mexico border.

Like I mentioned, adults are mostly located offshore, and they
are closely associated with outer reef slopes, offshore banks,
and artificial reefs at depths of seventy to 600 feet. When
they are young, they mostly feed on small crustaceans and other
shrimp and other small fish also associated with the sargassum
complex that they use throughout that life cycle, and, as
adults, their diet shifts mostly to other -- To predominantly
fish.

We don’t really know much about what size they reach maturity,
but almaco jack is actually a species of importance in
aquaculture, and so I reached out to Kampachi Farms in Hawaii,
which seems to be providing a lot of the brood stock that’s
being used, at least in Latin America, for aquaculture of almaco
jack, and they said that they can see initial gonad development
in males within twenty months and in females within twenty-four
months, and this species tends to be ranging between seven to
nine pounds.

I did ask for size, but the response I got was that they deal
with fish in pounds and not in inches, and so I couldn’t really
make a direct comparison to what I found in the literature
regarding sexual maturity.

Moving on to regulations, these two tables summarize the
regulations that apply to commercial and recreational fishing of
almaco jack in Gulf waters, and so, if you scroll up to the A,
Table A is for commercial and B is for recreational, and, as you
can see, in general, there isn’t a minimum size limit for
commercial fishing of almaco jack. There isn’t a trip limit,
and there is no closed season.

As of recently, the South Atlantic approved the minimum size
limit of twenty inches fork length, based on some public
testimony, and so the stakeholders were reporting that they were
catching fish that were large enough, and they were looking for
regulations that would maintain -- That would allow them to
reduce discards by maintaining the larger fish, because, when
they sell those to the restaurants, they have a higher market
value, and so they looked at their data, and they report that --
The data went from 2014 to 2016, and 88.5 percent of their
commercial landings were above that twenty-inch fork length, and
66 percent of the catch was above twenty-six inches, and so they
were assuming that regulatory discards are expected to be
minimal.

If we look at recreational almaco jack, it’s included in the
Reef Fish FMP in the Gulf, and so it’s part of the twenty-fish
aggregate for the bag limits. Again, there is no size limit for
recreational fishing, and there is no closed season.

Now I’m going to be going over some of the data, landings data,
for the Gulf of Mexico, and you will see that in your document
in Figures 2 and 3, which contain the time series from 2000 to
2017.

I will show you the data based on states, but just note that,
for confidentiality reasons, I did have to group certain states,
Alabama and Florida and Louisiana and Mississippi, and so, in
this figure, on the Y-axis, you’re going to see landings in
pounds of whole fish, whole weight, and, on the X-axis, you’re going to see the time series. The purple line is commercial landings, and the light blue is recreational landings, and so you can see that most of the fish that are being reported in these landings mostly come from the recreational sector.

Since the ACL for the jacks complex, which includes almaco jack, lesser amberjack, and banded rudderfish, was set to 312,000 pounds, and we have basically stayed below the ACL since it was established.

Here we’re looking at the state data, and the Plot A is for commercial and for B is for recreational again, and the Y-axis is your landings, and the X-axis is your years. Overall, most of the almaco jack come from the Alabama and Florida region. As we can see, on the A, in the navy blue, landings for Louisiana and Mississippi have been declining in the past couple of decades, and then Texas -- Trip reporting for Texas began in 2007, and so that’s why we don’t start to see that line until after that timeframe. Also, the max here you can see here reported for the commercial fishery is close to 40,000, whereas, in the recreational, we’re in the 100,000 pounds.

If we were to look at the size and how big are these almaco jacks that we’re catching in the Gulf and how it would -- If we were to apply a minimum size limit to this fish, how would this compare to what the South Atlantic is doing, and hopefully you can understand from this graph.

On the primary Y-axis is frequency of the size, and, on your X-axis, you will have your size of the fish in fork length, in inches, and, on the secondary Y-axis, it will be percent of the catch, and the data that I’m including here is for 3,687 fish sampled, and this data comes from the Trip Interview Program data.

The South Atlantic was reporting that, from 2004 to 2016, 88.5 percent of their catch was above the twenty-inch fork length. For the data that I’m showing you here, 57 percent of our catch is equal to or larger than a twenty-inch fork length, and so, instead of having 11.5 percent discards, like the South Atlantic showed in their report, we would be looking at 43 percent, which is what the dashed line is looking at.

CHAIRMAN POWERS: But this Figure 4 is just the commercial sector, isn’t it?

DR. MENDEZ-FERRER: Yes. Sorry. Yes, it is the commercial
sector in the Gulf. With this, I would like to hear some input on what thoughts you think we should bring up to the council to consider. Thank you.

CHAIRMAN POWERS: Okay. Thank you very much. Are there any thoughts about this? In particular, I guess what I would like to hear more is what problem is it that the council wants to address?

DR. ANDERSON: Can we go back one step further? What plans is this stock in now, or is it a --

DR. MENDEZ-FERRER: It’s in the Reef Fish.

CHAIRMAN POWERS: Let me start with I think it’s Harry that’s on the webinar, or whomever is on the webinar.

MR. ADRIANCE: Actually, it’s Jason. I had a couple of comments, if we can go to that graph or chart 3B, and so, as we discussed earlier in the day, the calibration between state surveys and MRIP and -- Things aren’t there yet, and, since LA Creel covers all of our species, and not just specific species, from 2014 forward there I don’t think is very comparable, if you’re putting it in with MRIP landings.

I noticed that the average weights you used were 2000 through 2017, and I assume the latter half of that is coming from MRIP data, at least you’re applying that to what would be Louisiana numbers reported through LA Creel, and so I don’t know if you can necessarily put those on the same graph from 2014 forward.

I understand the confidentiality issue in the commercial, but was there a reason those recreational landings were grouped, and I guess the same thing would apply to the Graph Number 2. Thanks.

DR. MIKE LARKIN: I helped with the recreational. Some of the headboat landings was confidential, and that’s why some of the recreational had to be pulled together. LA Creel is included, and you’re right that it is apples to oranges, but I feel like we’re stuck. In like 2014 and 2015, what else do we have? Like MRIP is not in Louisiana anymore, and so, in terms of Louisiana private and charter landings -- I am including LA Creel, because that’s what I have for Louisiana.

CHAIRMAN POWERS: I think, to Jason’s point though, one should be careful about the comparisons, because of the issues with how the different surveys are actually conducted. Kari, did you
have a comment?

DR. MACLAUCHLIN-BUCK: Yes, and so it’s with year-three, and so, qualitatively, and I know you can’t tell us some specifics about where the data come from, and that’s why you combined them, but, qualitatively, from the data, and maybe Mike Larkin can talk about this also, does it look like it’s the Panhandle of Florida? I guess, qualitatively, where are we talking about the data indicate where they’re fishing?

What I am looking for a little bit is there may not need to be Gulf-wide, and it could be very specific area, Florida or something, and so what did you see in that, on each of those? I realize the commercial is pretty small, but is it mostly -- Could you see any like county-level I guess that you could share, qualitatively, with us?

DR. LARKIN: I just looked at it by state, and definitely Florida drives the bus, in terms of the most landings, and Alabama is second, and I think -- I am just kind of ballparking here, and so I can’t answer your question, Kari, but, in terms of state, definitely Florida is the dominant, and second is Alabama, and then I would say Louisiana, Mississippi, and Texas after that, in terms of that’s how specific I can get right now.

DR. MACLAUCHLIN-BUCK: With that, in B, with that information, that spike in 2009, with that kind of lingering around 50,000 to 100,000 for the Alabama/Florida line, do you think that indicates that might just be a reflection of MRIP and not necessarily a pattern in that data? Do you feel like those recreational probably have been pretty stable?

DR. MENDEZ-FERRER: From my understanding, it might be an artifact of just the data collection process.

CHAIRMAN POWERS: Luiz.

DR. BARBIERI: If I may add to that, another issue is identification, species ID, with this species and lesser amberjack and greater, and you may remember, when we were looking at the landings only ABC setting for this species, that it’s kind of hard to determine when the landings were stable, because there are these sometimes peaks that we can’t guarantee that they represent specifically that species, because it’s whatever was reported and not necessarily representing that species.

I can tell you that, in our Gulf Reef Fish Survey in the Gulf
that we implemented for reef fish specifically, we have these three species listed together, because it’s so difficult to get information on a species basis for them.

DR. LARKIN: I agree with that, Luiz, although I feel like, with the MRIP and LA Creel and Texas, they have dockside observers identifying them, but you’re right that the commercial is -- The dealers, you’re hoping that they identify them correctly, and the TIP data, the commercial length, the same thing. They also have commercial dockside intercepts as well, and so the commercial landings, you’re right, there could be certainly an ID, but I feel like I’m confident with the recreational, because some dockside fishers have identified them.

DR. BARBIERI: Remember discards as well, and this is just landings that do not integrate discards at all.

DR. LARKIN: It’s just landings, yes.

DR. BARBIERI: So not catch?

DR. MENDEZ-FERRER: That is what made it to the dock.

CHAIRMAN POWERS: Thank you. Are there other comments? Again, I think Luiz, who is reporting on this to the council, there is certain caveats with the data that they should be aware of. Everybody wants to talk. Good.

DR. LORENZEN: A couple of things. One is for the maturation, and so, if you have the animal in culture, they always mature much earlier than in the wild, and so I would be careful using that.

The other question, and, of course, this is also a species that will be in that experimental cage off of Sarasota, and so there’s an aquaculture interest also here in the region, but, finally, this was part of the data-limited assessment, right, and so I was wondering -- I was on that panel, and I was looking back, and I can’t remember what we did with almaco jack, but I guess there should be information there that should also be conveyed.

DR. CALAY: Yes, it was part of SEDAR 49, the data-limited assessment, and we did not produce management advice from that data-limited attempt, and I think a large part of our concerns were the species misidentification issues, but, that being said, we should definitely be aware of this document and include it in the triage activities for any work that we intend to conduct.
with almaco jack in the future.

CHAIRMAN POWERS: Doug.

MR. GREGORY: The recreational length frequencies are missing, and, unlike the South Atlantic, which had 88 percent of their commercial harvest above the size limit, only 57 percent of the Gulf harvest supposedly is above the size limit, and the council is asking us to provide input as to whether similar regulations need to be implemented, or should be implemented, in the Gulf, and I won’t use the word “need”, and I don’t know if the request came from the State of Florida.

The State of Florida didn’t implement a size limit for the Gulf side of the state, and the thing I see, the thing happening more and more with the Gulf Council, is them responding to maybe a request from a state or fishermen about concerns and implementing regulations without science, without the stock assessment, and they did something similar with cobia recently and again with red grouper, and they just changed the size limit without real analysis, and that’s a concern to me.

I mean, I would be against recommending any implementation of regulations at this point, but, other than that, the data is kind of incomplete, and I would hope the Gulf Council doesn’t move forward with implementing something based on whatever information they have at this point in time.

DR. TOLAN: Just a follow-up on the SEDAR 49. I was part of the panel for that also, and I did the writeup for the early life history, and there was virtually no information at all about eggs and larvae and juveniles for this species, and one of the stumbling blocks was the idea was to use the same sort of parameters associated with greater amberjack and just substitute that in for the almaco jack, and the panel thought that wasn’t a good idea, and so there was a lot of research recommendations that came out of that, and we didn’t provide any management advice at all, because there is just virtually nothing known about their early life history.

DR. CALAY: Certainly, at the time of the SEDAR 49 data-limited workshop, we felt there was insufficient information to develop management advice from a data-limited approach, and so we agreed with the SSC’s recommendation to proceed with catch only.

MR. GREGORY: One caveat to what I said. I mean, if we had good size at maturity information, and I base a lot of how I feel about fisheries on that, relative to the size of entering into
the fishery, but I don’t see that, and I don’t know if the South
Atlantic Council had information for the fish in their area, as
to maturity.

DR. MICKLE: This is a pretty large species in the aquaculture
world and entering the Gulf of Mexico, and it is right now, as
we speak, and there is a lot of information about the early life
history from I guess a private standpoint that may not make it
into scientific literature, but they have messed with this
species, from an aquaculture perspective, quite a bit, and
there’s a lot of information out there.

Maybe not in wild-stock scenarios, but it is out there, and I
just don’t know if it’s making it to this, which kind of
concerns me a little bit, and I haven’t looked, but, the way
that I hear the aquaculturists talk, they seem to know
absolutely everything that is needed to know for this species to
be artificially grown in an aquaculture setting, and so it seems
like there is information out there.

Whether it’s applicable to a wild-stock scenario or a stock
assessment, that is a discussion I think the SSC needs to have,
but, as far as things that we don’t know about this species,
you’ve kind of got to think about it. Is there or isn’t there,
and maybe we should look, or have somebody look. Thank you.

DR. LORENZEN: There would be growth and maturity information
that can be from aquaculture, but they do grow and mature
differently in culture from the wild, but with that caveat.

MR. GREGORY: I just consulted my personal stock assessment
reference, Google, and I found something that just length at
maturity is eighty-one centimeters, and so what is that, about
thirty-two inches? I would definitely be opposed to having a
size limit as low as twenty inches, but, then again, if you put
a size limit at thirty-two -- But that’s the same as greater
amberjack, and so I wonder if this, again, is confused with
greater amberjack.

DR. MENDEZ-FERRER: I think I’ve seen that paper, and, if I’m
correct, it was based on a single individual.

CHAIRMAN POWERS: I am a firm believer in the process, and there
was a data-limited workshop that went along that actually looked
at a lot of these things, and it’s actually cited in this
document, with the website, and so I think that the council
should be reminded that that exists, and I’m not sure what else
we can say beyond that though, unless somebody has something
specific.

DR. BARBIERI: Joe, I interpret this presentation and the whole
discussion by the SSC a bit differently, I guess, than Doug. I
was thinking of this as more an informational piece, Natasha and
staff working with the Science Center and SERO to put together
something that is starting to compile information on this and
bounce it off of us, to see if there are any suggestions here on
is there room for improvement or something that raises a red
flag or not, and what else we should put here or maybe take
something out, but I don’t see any proposal here explicit in
this document for size regulations, is there?

MR. GREGORY: If I may, on page 6, the first sentence of this
paragraph reads: During the June 2019 meeting, the Gulf Council
requested the SSC to review the life history and recent landings
data for almaco jack in the Gulf and provide feedback on the
implementation of similar regulations that have been recently
accepted. They are asking for a recommendation of whether the
Gulf should consider a twenty-inch size limit, basically, and
they want our feedback on that.

DR. BARBIERI: Is that correct, because this was not explicit in
our scope of work, by the way, and so just -- The SSC is
considering an evaluation of implementation of proposed size
limits for almaco jack.

CHAIRMAN POWERS: I wonder what the basis is for us to make a
recommendation, essentially, other than if you knew something as
broad as Doug is suggesting, if you know something about age at
maturity, and it’s sort of a rule of thumb that’s always been
used, is to make sure that they spawn once before they die kind
of thing.

MR. RINDONE: I was just going to clarify some of the scope of
work. Like Natasha had said, the South Atlantic and the State
of Florida, at least in the Atlantic waters, has increased the
commercial size limit only to twenty inches, and that’s largely
for market reasons, and it’s not based on anything biological,
because, by and large, like Natasha reviewed, those data don’t
exist for wild stocks, and so there may be a plethora of data
for growing these organisms in captivity using feed, but we
don’t have any way to compare that information to anything from
wild stocks, because the wild-stock information is non-existent.

All the council is asking the SSC to do is to take a look at
what she provided, and, if there’s appropriate feedback to
provide to the council with respect to the decision that was
made by the South Atlantic Council and the State of Florida, then provide some feedback, but you are by no means being told to pick a size limit.

DR. MACLAUCHLIN-BUCK: My feedback would be, with the information provided, there does not seem to be an issue, with the information that we have, and it doesn’t seem like there has been a large increase. If they are anticipating an increase, like it’s getting more popular, or the jacks complex in general is getting more popular, and they anticipate some identification issues, then maybe look into it and being proactive, but, with what we have right now, and with that it’s not a super popular fish that seems to be growing in targeting, that there doesn’t seem to indicate to be a reason for additional regulations at this time.

The only thing that I can think of is having -- If there is a consistency for Florida, that the social sometimes with consistency -- There are some social benefits and enforcement benefits, but that’s the only thing that I can see of anything moving forward. There doesn’t seem to be anything in here that would indicate that there would need to be additional regulations for almaco at this time.

CHAIRMAN POWERS: I guess, if they are considering something for the commercial sector, for reasons other than biological conservation, and the information there would be presumably appropriate, if those are the size frequencies that we have, and that’s the information, but it only relates to the commercial sector. Should we leave it to Luiz, the prerogative of how to couch this discussion?

MR. RINDONE: You will do great, Luiz.

CHAIRMAN POWERS: I would sort of remind them that -- The difficulty I’m having is the citation there is for the data-limited workshop, and I don’t remember much of the details of it, but you should probably look at that before you present this information, because it was summarized by Shannon and Jim, and so make that part of the --

DR. BARBIERI: Fortunately, I chaired the review panel in Miami, and so I have a lot of information on that.

CHAIRMAN POWERS: All right. Thank you. We are at Other Business. I am going to leave it to Luiz to present this, and this was sort of late in the game, when I was actually traveling, and so I’m not real familiar with it, but it’s work
put together by several people, including Michael Drexler, who is in the audience, and some issue that Bob Gill has also noticed, and Luiz, and so let me just pass it on to Luiz to present the information there.

OTHER BUSINESS

DR. BARBIERI: Thank you, Mr. Chairman. By the way, this did come in late in the game, and the idea, at this meeting, was to basically make the SSC aware of this document and the issue to be discussed and perhaps have a more in-depth discussion at another future meeting, the next one, if at all possible, if appropriate to be included on the agenda.

Basically, Mike, with Ocean Conservancy, and I don’t mean to speak for him, but there is some bullet points there in the document that you put together that basically identify that some of the catch advice projections that are coming out, yield stream projections that are coming out of a number of recent assessments seem to be fairly high, recommending a fairly level of landings or take for some of these stocks that go beyond where the current landings have been.

There is a jump, a spike, in the projections coming out of the assessment that make recommendations of OFL and ABC that are way above where recent landings had been, and Bob Gill, just out of curiosity, and because I guess we are both geeks, had called me out of the blue a couple of weeks ago, or last week, and we were talking just about what he was seeing in the red grouper assessment that was just being finished and the report being posted on the SEDAR website.

I did go look at that document, and, sure enough, it has an OFL going forward that basically doubles the level of landings that we had just recently, last fall, basically brought the landings, the ACL, back down to about four-million pounds, because the industry has not been able to land their quota, and the fish has been identified as being in a low level of abundance and biomass, and so this, going forward, was a bit of a surprise in that projection spike.

In this document that eventually you should go through, you see that Mike provides other examples, greater amberjack and cobia and mackerel, king mackerel, where the same thing happens, and the Science Center has been aware of this issue, and we have been discussing it with Matt Smith and Shannon, and it’s something that hopefully they can come prepared for the next meeting to look into and give us some guidance on having it
addressed. Bob actually crafted a draft motion to put before
the committee requesting the Science Center to do some follow-up
on this.

MR. GILL: To add to that, what came to my point -- I’m on the
red grouper assessment panel, and, sure enough, that yield spike
occurs immediately after the present, and it occurred to me that
that occurs in most assessments, and I would say virtually all,
for the last six or seven years, and what we do typically is
follow the yield curve, and so we derive our OFL and ABC
recommendations, including constant catch, that includes that
spike.

The question, in my mind, was, well, if that spike is not real,
we’re predicating funky advice, and so I thought that it was
important enough, and I know the Science Center has talked about
it, that we have the red grouper review coming up to us the next
meeting, with that spike in it, from which we’re supposed to --
We need to provide OFL and ABC recommendations, but then the
issues comes of what do we do with that spike.

I would make the motion that’s on the board, that the committee
requests the Science Center analyze the assessment outputs of
yield stream projections that result in a spike in yield in the
first year or years of the projection to determine cause and
evaluate potential solutions. The idea being that this will
provide some basis for a better discussion prior to us making
those decisions on red grouper.

CHAIRMAN POWERS: Is there a second? We have a second.

DR. CALAY: I just wanted to say that the Science Center -- Rick
actually offered to come to our Science Center on Thursday and
Friday, and he asked what topics we would like to discuss, and
this is on our list, and so we are aware that, especially in the
recent red grouper assessment, we had some concerns about the
projections, and so that is something we will be discussing with
Rick this week, and, if there are larger issues that we need to
tackle, you will certainly become aware of them.

MR. GREGORY: At the Caribbean SEDAR review workshop a couple of
weeks ago, this came up, and Adyan and Bill Harford were doing
the assessment, and I don’t recall exactly what their
explanation was, but it had something to do with, I thought, a
terminal year of two years ago and a projection starting next
year and an accumulation of -- In the model, an accumulation of
juveniles or something that come into the projection. I can’t
give a better explanation of that, but there was a discussion,
and the answer at the time made sense to me, but I’m sorry that I don’t recall.

CHAIRMAN POWERS: There could be a lot of reasons for it, and I am not -- My reaction is that sometimes, if it’s that sort of thing, sometimes it will go the other direction, and it won’t be a spike, and it will be a low point, depending on what the time series of recruitment is.

There is also how well you have that interim years catches and how they get estimated, and so there’s a number of things like that, but I am encouraged that this will be addressed before that.

DR. CALAY: In the context of red grouper, this is a fairly -- We are trying to handle a stock assessment that has allocations in it and that has a red tide effect in it, and we had some concerns, which we will discuss with Rick, and we will let you know what our findings are, but you are correct that, in other cases, there are a variety of reasons why this may arise and be completely expected, and one of them is recruitment deviations that are positive in the terminal years, and another reason might be that we’re well above SSB at MSY and the yield stream suggests that we can fish the stock down, and that tends to happen rapidly in the projections. There are reasons why this can occur and be normal, but we’ll make sure that what we’re doing with projections is as appropriate as we can make it, and we will report back.

CHAIRMAN POWERS: Are there any objections to this motion? If not, thank you very much.

MR. RINDONE: Joe, the next meeting is September 17 and 18.

CHAIRMAN POWERS: Ryan reminded me that our next meeting in September 17 and 18, and hopefully it won’t get changed late in the game, like this one was.

DR. CALAY: No, this one will not.

CHAIRMAN POWERS: Rick.

DR. METHOT: Thanks, Joe. Just briefly, a follow-up from the ABC control rule discussion, and I checked with our National Standard 1 Technical Guidance Working Group, and there is a subset of it that has developed a table of all the OFL control rules and all the ABC control rules by tier by council, and so we have quite a large table with all of them laid out with the
most recent iterations of them, and so it’s going to be a valuable resource for everybody, and it’s not quite available to distribute, but we can make it available, if you would like, for the group that’s going to be deliberating on ABC control rules.

CHAIRMAN POWERS: Great. Thank you. With that, I believe we have finished our business, and thank you all for participating, and the meeting is adjourned.

(Whereupon, the meeting adjourned on July 31, 2019.)

- - -