

1 GULF OF MEXICO FISHERY MANAGEMENT COUNCIL

2
3 MEETING OF THE STANDING & SPECIAL REEF FISH, SOCIOECONOMIC, &
4 ECOSYSTEM SCIENTIFIC AND STATISTICAL COMMITTEES

5
6 GMFMC Office Tampa, Florida

7
8 SEPTEMBER 27-28, 2023
9

10 **STANDING SSC VOTING MEMBERS**

- 11 Luiz Barbieri.....
- 12 Harry Blanchet.....
- 13 David Chagaris.....
- 14 Roy Crabtree.....
- 15 Douglas Gregory.....
- 16 David Griffith.....
- 17 Paul Mickle.....
- 18 Trevor Moncrief.....
- 19 Will Patterson.....
- 20 Daniel Petrolia.....
- 21 Sean Powers.....
- 22 Steven Scyphers.....
- 23 Jim Tolan.....

24
25 **SPECIAL ECOSYSTEM SSC VOTING MEMBERS**

- 26 Mandy Karnauskas.....
- 27 Josh Kilborn.....
- 28 Steven Saul.....

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

- 31 Jason Adriance.....
- 32 Michael Allen.....
- 33 John Mareska.....

34
35 **SPECIAL SOCIOECONOMIC SSC VOTING MEMBERS**

- 36 Luke Fairbanks.....
- 37 Cynthia Grace-McCaskey.....
- 38 Jack Isaacs.....

39
40 **STAFF**

- 41 John Froeschke.....Deputy Director
- 42 Jessica Matos.....Administrative and Accounting Technician
- 43 Emily Muehlstein.....Public Information Officer
- 44 Ryan Rindone.....Lead Fisheries Biologist/SEDAR Liaison
- 45 Charlotte Schiaffo.....Administrative & Human Resources Assistant
- 46 Carrie Simmons.....Executive Director

47
48 **OTHER PARTICIPANTS**

1 Lisa Ailloud.....SEFSC
2 Angela Collins.....FL
3 Michael Drexler.....Ocean Conservancy
4 Francesca Forrestal.....SEFSC
5 Tom Frazer.....GMFMC
6 Shepherd Grimes.....NOAA GC
7 Peter Hood.....NMFS
8 Mike Larkin.....NMFS
9 Brian Lewis.....FL
10 Sue Lowerre-Barbieri.....FL
11 Jack McGovern.....NMFS
12 Julie Neer.....SEDAR
13 Beverly Sauls.....FWC, FL
14 Clay Schiebler.....Crystal River, FL
15 Katie Siegfried.....SEFSC
16 C.J. Sweetman.....GMFMC
17 Ed Walker.....GMFMC

18
19
20

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[PAGE 205](#): Motion that the SSC accepts the 2023 vermilion snapper interim analysis as consistent with the best scientific information available. The SSC recommends the OFL at the estimated five-year average, in FES units, as 5.805 million pounds whole weight and the ABC at the estimated five-year average, in FES units, at 5.049 million pounds whole weight. [The motion failed on page 227](#).

[PAGE 281](#): Motion that the SSC recommends to update catch advice for lane snapper using the 2023 SEDAR 49 interim analysis. The OFL is recommended to be 1.116 million pounds whole weight (in FES units). The ABC is recommended to be 1.088 million pounds (in FES units). [The motion carried on page 283](#).

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1 The Meeting of the Gulf of Mexico Fishery Management Council
2 Standing and Special Reef Fish, Special Socioeconomic, and Special
3 Ecosystem Scientific and Statistical Committees convened on
4 Wednesday, September 27, 2023, and was called to order by Vice
5 Chairman Luiz Barbieri.

6
7 **INTRODUCTIONS**

8 **ADOPTION OF AGENDA**

9 **APPROVAL OF VERBATIM MINUTES AND MEETING SUMMARY: JULY 19-20,**
10 **2023 MEETING**

11 **SCOPE OF WORK**

12 **SELECTION OF SSC REPRESENTATIVE FOR THE OCTOBER 23-26, 2023 GULF**
13 **COUNCIL MEETING IN PANAMA CITY, FLORIDA**

14
15 **VICE CHAIRMAN LUIZ BARBIERI:** Good morning. My name is Luiz
16 Barbieri, and I am the Vice Chair of the Scientific and Statistical
17 Committee for the Gulf of Mexico Fishery Management Council. We
18 appreciate your attendance on this webinar and input in this
19 meeting. Representing the council is Tom Frazer.

20
21 Council Staff in attendance include Carrie Simmons, John
22 Froeschke, Ryan Rindone, Jessica Matos, and Charlotte Schiaffo.
23 Notice of this meeting was provided to the Federal Register, sent
24 via email to subscribers of the council's press release email list,
25 and was posted on the council's website.

26
27 This week's meeting will include the following topics: Adoption of
28 the Agenda; Approval of the July 19-20, 2023 Meeting Minutes and
29 Summary; Scope of Work; Selection of SSC Representative for the
30 October Council Meeting; Review of Gag Grouper Abundance,
31 Movement, Spawning Behavior, Discard Mortality, and Environmental
32 Influences; Review of Possible Management Modifications for Gag
33 and Black Grouper; Discussion of SEDAR 94 Florida Hogfish Scope of
34 Work; Review of Gulf of Mexico Gag Health Check; Review of
35 Vermilion Snapper Interim Analysis; Review Southeast Region BSIA
36 Framework, and, by BSIA, that's best scientific information
37 available; Incorporating Social Science Theory and Methods into
38 Ecosystem Assessments; Review of Lane Snapper Updated Catch
39 Analysis; Public Comment; and Other Business.

40
41 This webinar is open to the public and is being streamed live and
42 recorded. A summary of the meeting and verbatim minutes will be
43 produced and made available to the public via the council's
44 website. For the purpose of voice identification, and to ensure
45 that you are able to mute and unmute your line, please identify
46 yourself by stating your full name when your name is called for
47 attendance. Once you have identified yourself, please re-mute
48 your line. For members of the SSC on the webinar, we will be using

1 the raised-hand function, for the SSC Chair to help recognize you
2 to speak. Jess will type the names up on the memo pad on the
3 screen, and I will be keeping track of hands in the meeting room
4 as well, to add to the list. With that, Jess, we are ready for
5 roll call.

6
7 **MS. JESSICA MATOS:** Luiz Barbieri.

8
9 **VICE CHAIR BARBIERI:** Luiz Barbieri.

10
11 **MS. MATOS:** Harry Blanchet.

12
13 **MR. HARRY BLANCHET:** Harry Blanchet.

14
15 **MS. MATOS:** David Chagaris.

16
17 **DR. DAVID CHAGARIS:** David Chagaris.

18
19 **MS. MATOS:** Roy Crabtree.

20
21 **DR. ROY CRABTREE:** Roy Crabtree.

22
23 **MS. MATOS:** Doug Gregory.

24
25 **MR. DOUG GREGORY:** Doug Gregory.

26
27 **MS. MATOS:** David Griffith.

28
29 **DR. DAVID GRIFFITH:** David Griffith.

30
31 **MS. MATOS:** Paul Mickle.

32
33 **DR. PAUL MICKLE:** Paul Mickle.

34
35 **MS. MATOS:** Trevor Moncrief.

36
37 **MR. TREVOR MONCRIEF:** Trevor Moncrief.

38
39 **MS. MATOS:** Jim Nance. Will Patterson.

40
41 **DR. WILL PATTERSON:** (Dr. Patterson's comment is not audible on
42 the recording.

43
44 **MS. MATOS:** Your sound is not coming through very clear. You might
45 need to switch to the phone. Dan Petrolia.

46
47 **DR. DANIEL PETROLIA:** Dan Petrolia.

48

1 **MS. MATOS:** Sean Powers.
2
3 **DR. SEAN POWERS:** Sean Powers.
4
5 **MS. MATOS:** Steven Scyphers.
6
7 **DR. STEVEN SCYPHERS:** Steven Scyphers.
8
9 **MS. MATOS:** Jim Tolan.
10
11 **DR. JIM TOLAN:** Jim Tolan.
12
13 **MS. MATOS:** Rich is not available. Jason Adriance.
14
15 **MR. JASON ADRIANCE:** Jason Adriance.
16
17 **MS. MATOS:** Mike Allen.
18
19 **DR. MICHAEL ALLEN:** Mike Allen.
20
21 **MS. MATOS:** John Mareska.
22
23 **MR. JOHN MARESKA:** John Mareska.
24
25 **MS. MATOS:** Luke Fairbanks.
26
27 **DR. LUKE FAIRBANKS:** Luke Fairbanks.
28
29 **MS. MATOS:** Cindy Grace-McCaskey.
30
31 **DR. CINDY GRACE-MCCASKEY:** Cindy Grace-McCaskey.
32
33 **MS. MATOS:** Jack Isaacs.
34
35 **DR. JACK ISAACS:** Jack Isaacs.
36
37 **MS. MATOS:** Mandy Karnauskas.
38
39 **DR. MANDY KARNAUSKAS:** Mandy Karnauskas.
40
41 **MS. MATOS:** Josh Kilborn.
42
43 **DR. JOSH KILBORN:** Josh Kilborn.
44
45 **MS. MATOS:** Steven Saul.
46
47 **DR. STEVEN SAUL:** Steven Saul.
48

1 **MS. MATOS:** Tom Frazer.
2
3 **DR. TOM FRAZER:** Tom Frazer.
4
5 **MS. MATOS:** C.J. Sweetman.
6
7 **DR. C.J. SWEETMAN:** C.J. Sweetman.
8
9 **MS. MATOS:** Thank you.
10
11 **VICE CHAIRMAN BARBIERI:** Thank you, Jess. With introductions
12 completed, we have -- The next item is Adoption of the Agenda. Do
13 I have a motion for the adoption of the agenda or any suggestions
14 or recommendations for changes to the present agenda, as it stands?
15
16 **DR. CRABTREE:** So moved.
17
18 **VICE CHAIRMAN BARBIERI:** Is there a second?
19
20 **SSC MEMBER:** Second.
21
22 **VICE CHAIRMAN BARBIERI:** Thank you. The motion carries. The
23 agenda is approved, and we now have Approval of the Verbatim
24 Minutes and Meeting Summary for the July 19-20, 2023 Meeting. Do
25 we have any comments, recommendations, corrections, or issues with
26 those verbatim minutes that were provided in your briefing book?
27 Any opposition to adopting the verbatim minutes as they stand?
28 Okay. The verbatim minutes are adopted.
29
30 Now we have Agenda Item Number III, the Scope of Work. Mr. Rindone,
31 shall we just do like we usually do and go scope of work item-by-
32 item, or do you want to give an overview?
33
34 **MR. RYAN RINDONE:** No, and let's do that.
35
36 **VICE CHAIRMAN BARBIERI:** Okay, and so we're going to be describing,
37 through the scope of work, each one of the items as they are
38 presented in the agenda, and so Agenda Item Number IV, Selection
39 of SSC Representative for the October 23 through 26, 2023 Gulf
40 Council Meeting in Panama City, any volunteers to go to beautiful
41 Panama City, Florida, for the council meeting? I mean, I'm
42 available to go, but I don't want to prevent anybody else, if you
43 are interested in going, to attending the meeting and presenting
44 our SSC meeting report.
45
46 If not, then I will be there to represent us, and now, Mr. Rindone,
47 this brings us to Agenda Item Number V, Review of Gag Grouper
48 Abundance, Movement, Spawning Behavior, Discard Mortality, and

1 Environmental Influences. Can you give us the scope of work?
2

3 **REVIEW OF GAG GROUPEL ABUNDANCE, MOVEMENT, SPAWNING BEHAVIOR,**
4 **DISCARD MORTALITY, AND ENVIRONMENTAL INFLUENCES**
5

6 **MR. RINDONE:** I will do it, and so you guys are going to see
7 presentations today from several researchers on Gulf gag grouper.
8 Dr. Sue Lowerre-Barbieri is going to present on reproductive
9 resilience in the protogynous gag grouper. Dr. Angela Collins is
10 here to present on the effects of recreational catch and release
11 angling on the survival of gag and gear and strategies designed to
12 reduce barotrauma.
13

14 Our own Dave Chagaris is going to present on age-specific mortality
15 of gag from red tide on the West Florida Shelf, and Ms. Bev Sauls
16 will be presenting on discard mortality of gag on the West Florida
17 Shelf.
18

19 These presentations are intended to inform you guys and assist you
20 in providing recommendations to the council, in keeping with the
21 council's goals for the Gulf gag stock, such as to reduce fishing
22 mortality on male gag, constrain future harvest to the ACL,
23 increase the probability of rebuilding and avoid increasing
24 discards, and to reduce vulnerability of gag during spawning, to
25 increase spawning success. You guys should evaluate the
26 information presented and consider how it may be used to inform
27 the council with regard to its goals for gag.
28

29 **VICE CHAIRMAN BARBIERI:** Thank you, Ryan, and I think we are ready
30 for our first presentation. Dr. Lowerre-Barbieri, are you ready
31 for us?
32

33 **GAG OBSERVATIONS USING REMOTELY-OPERATED VEHICLES ON THE WEST**
34 **FLORIDA SHELF**
35

36 **DR. SUE LOWERRE-BARBIERI:** Well, thank you for inviting me to
37 present on some of our research and to come and listen to the other
38 presenters. I hope to learn a lot, as well as the discussions, in
39 terms of how we can help rebuild this stock. I know, on the
40 agenda, it said that I was going to talk about abundance, and that
41 was a little bit of clickbait, I think, for all of you, to make
42 sure that you went and looked at my talk. There is one slide that
43 goes there, but it is about reproductive resilience, as Ryan
44 mentioned.
45

46 You might be wondering what reproductive resilience is, and I do
47 want to set this up as the background, because it's really
48 important, in terms of understanding gag productivity, and so,

1 basically, where we are in fisheries science right now, we often
2 have uninformative stock-recruitment relationships, and we have
3 the sweepstakes recruitment hypotheses, which posits that
4 reproductive success in marine fish is driven by random and
5 external forces.

6
7 Those two things together would suggest that fish are really poorly
8 adapted to their environment in sustaining any level of mortality,
9 in that they don't undergo evolution. It's all great science that
10 led to where we got there, but I think it's time for us to rethink
11 about our conceptual model, and that's what the reproductive
12 resilience paradigm is trying to do.

13
14 Basically, it's highlighting the complexity of fish reproductive
15 strategies, that they're very different than terrestrial
16 vertebrates, and that you have these different traits, fixed
17 traits, and so like, in gag, something like your sexual system, or
18 your gender system, that's genetically fixed. Behavioral traits,
19 and so movement and spawning site selection, things like that, and
20 then the ecologically-varying traits, and those are things that
21 are going to be impacted by climate change and a number of other
22 things, in terms of as we try and figure out how to conserve the
23 things we need to for fish to stay productive in a changing
24 environment.

25
26 I do just want to highlight this paper that just came out in *Fish*
27 *and Fisheries* that Mike Tringali led, and that's our geneticist at
28 FWRI. We used this incredible dataset that we have on red drum,
29 which has been a posterchild for the recruitment sweepstakes,
30 sweepstakes recruitment hypothesis, and we actually had a study
31 that's gone on for over six years now, and collected over 12,000
32 genetic samples, and, with that, we were able to show that a big
33 issue, in terms of thinking that you have this sweepstakes
34 recruitment, is how you sample. Do you have enough sample, and
35 there's a lot coming out in the literature that you have to have
36 for these large marine fish populations, and you have to have much
37 higher sample sizes than what they had in the past.

38
39 Red drum did not meet the criterion for sweepstakes recruitment,
40 and neither do bluefin tuna or several other species, now that
41 we're beginning to get the samples that we need to, and so why
42 does that matter?

43
44 Again, just to hit this point, in terms of our stock-recruitment
45 relationships, there is the theory behind them, and that theory is
46 the same theory that is used for whitetail deer, and, if you're a
47 terrestrial vertebrate, it makes a lot of sense. If you're a
48 terrestrial vertebrate, even if you're a rabbit, which we think of

1 as producing a lot of offspring, your maximum number in a year is
2 going to be about eighty-four.

3
4 Most marine fish that we harvest produce hundreds of thousands of
5 eggs in a batch, and the ones that we manage produce multiple
6 batches over the spawning season. It's a very different system.

7
8 If you're a terrestrial vertebrate, you also have a fixed ratio
9 strategy, and so, if you're an animal that grows bigger, and think
10 of an elephant, you're going to have a bigger baby. Marine fish,
11 nope. If you're a bluefin tuna, you have a one-millimeter diameter
12 egg, and, if you're a killifish, you have a one-millimeter diameter
13 egg, and, in terms of movement, just from the get-go, if you're a
14 terrestrial vertebrate, your babies stay put, which is very helpful
15 if you're going for the parental care strategy. If you're a marine
16 fish, typically your offspring start moving from the get-go,
17 because they're pelagic.

18
19 RRP is trying to look at that complexity in reproductive
20 strategies, highlighting that it's species specific and that we
21 need to think about going beyond just the traditional measures,
22 which have been lifetime fecundity, age at maturity, and longevity.

23
24 We need to recognize that movement plays a really important role
25 in marine fish, not just in that immediate offspring dispersal,
26 but also in spawning site selection and in protogynous species,
27 and I will go into that as I get to gag, and a good example of how
28 that's not currently captured, even in R versus K, is small pelagic
29 fish, right, and so they're very R selected, and they're also some
30 of the species most apt to collapse.

31
32 In terms of movement and reproductive resilience and why this is
33 especially important for protogynous species, in protogynous
34 species, fish are starting out as females, and then, as they age,
35 if you survive long enough, most of them turn into males.

36
37 Because of the fact that you have all of your young fish being one
38 sex, how the spawning sites, versus the nursery sites, are
39 distributed is going to make a huge difference in terms of sex-
40 specific fishing mortality, right, and so looking at how fishing
41 effort intersects with the life cycle, life cycle space of a
42 protogynous species, and, if you have nursery habitat which is
43 estuarine, like gag do, and become legal size in nearshore, and
44 that's where we have very heavy fishing pressure, you have to take
45 into consideration what's going on at that point, in terms of
46 maturity and sex change, or does it in fact occur on the spawning
47 sites, or do you have specifically sex-specific adult foraging
48 areas as well, and so those are some of the things that we've been

1 looking into with gag and I'll be talking about.

2

3 When we first started this research, that was in 2015, and, of
4 course, a lot of great research had been done on gag before we got
5 into the game, and it was known that they were protogynous, and it
6 was known that they had that long pelagic larval duration and that
7 nursery areas were estuarine.

8

9 Bill Lindberg did a series of really beautiful research over his
10 career, looking at sub-adult gag and how they select their sites
11 and the ontogenetic habitat shifts involved there, and Chris had
12 shown that gag form pre-spawning aggregations in late fall and
13 early winter, in relatively shallow water, and that spawning
14 aggregations form in fifty meters of depth or deeper, and the
15 hypothesis was that males remain in this deeper water, whereas
16 females use shallower water, and then they go to spawning
17 migrations.

18

19 The sex change would occur only on the spawning grounds, mediated
20 by social interactions, and so somehow sensing what the sex ratio
21 is, or potentially having a threshold size or age that may or may
22 not be relative to who else was on the spawning grounds, and then
23 it would occur during the spawning season or just after it, and
24 that, of course, with that conceptual model, that spawning reserves
25 would increase male sex ratios, and this modeling, done by Heppell
26 et al. suggested that they would increase to about 15 percent, but
27 Ellis and Powers did suggest that it might only go up to about 5
28 percent if there's density-dependent feedback loops.

29

30 I am going to be talking mainly about two studies that we've
31 conducted on reproductive potential that we've actually completed.
32 The more recent one was in Steamboat Lumps, and I'm also going to
33 present that one first, since I presented on the other one several
34 years back at the SSC, and the Madison-Swanson study -- There is
35 a publication, and I'm sorry that I didn't put that on the website
36 for background, but I'm happy to share that paper, if anyone is
37 interested. For the others, the papers are forthcoming.

38

39 So the Steamboat Lumps study sampled the MPA as well as the Sticky
40 Grounds to the south, which you can see there. The Steamboat Lumps
41 and the Sticky Ground there to the south, the Madison-Swanson
42 study, as well as Tarpon Springs, and we did some exploratory
43 sampling in Tarpon Springs, to compare catch rates there to the
44 MPA, but not a lot of sampling there, and then the Madison-Swanson
45 study was in the Madison-Swanson MPA as well as an open area, and
46 that's the red star, and the Edges, which is a seasonally-closed
47 area to the south.

48

1 Then we're lucky enough, working with FWRI, that we could work
2 with Bev and the fisheries-dependent monitoring group and the Ted
3 and the fisheries-independent monitoring group, and they provided
4 gonads that we could do the histological reproductive analysis on,
5 as well as the data that went with that, to develop a much larger
6 pooled sample size. We used the same methods for both studies,
7 and we collected fish with hook-and-line as well as with video.

8
9 We've also had a couple of graduate students in the lab, and one
10 that has completed, Rachel Germeroth, did her master's on looking
11 at the spatial ecology of both gag and gag fishermen, and hopefully
12 Bev and I will find a minute somewhere to finish and publish that,
13 because it actually was really nice work, and then Hannah
14 Gottesman, my current PhD student, is looking more into the
15 population structure, and so she's doing otolith microchemistry to
16 look at the nursery origin of sub-adults and those fish sampled in
17 those spawning reserves.

18
19 She is also using dispersal modeling, working with Andy, I think
20 who is on the line, and some other folks with NMFS, to model the
21 dispersal, the early life history dispersal of gag, and using
22 genetics to look at the effective breeding population, as well as
23 whether males really are residential and using mitochondrial
24 genetics, and hopefully we have another gag person who is going to
25 be doing their master's on gag, and that's Hayden in the back of
26 the room here.

27
28 Of course, when we got started, we started by reading all the
29 science and reaching out to the experts, and I have fishers as my
30 top of the list there, and we've worked with some really great
31 fishermen over the years, and learned a ton from them, Ed Walker
32 and Steve Papen, amongst others, and we've been lucky enough to
33 work with all the stock assessment scientists, even Megan in our
34 first gag workshop, which we called Gagorama, and Scott Heppell
35 was able to join us at that workshop, as well as Chris Koenig.
36 Bill Lindberg and I have had lots of conversations, and he's on
37 Hannah's committee, and he has really helped me better understand
38 some of the sub-adult gag work.

39
40 Then we've hosted and, most importantly, listened at a couple of
41 knowledge-exchange workshops. We had a captains meeting workshop
42 in 2021, to share our results from the Steamboat Lumps study and
43 hear the fishermen's thoughts on whether those made sense or not,
44 and then, at the more recent workshop that some of the folks here
45 were able to attend, with a range of fishermen throughout west
46 Florida, to talk about the results of SEDAR 72, if they made sense
47 with what they were seeing in the water, and, if they didn't make
48 sense, would they be willing to collaborate with us to get the

1 data to figure out what's really going on. If they think our
2 research is wrong, we love to be proven wrong. Collaborate with
3 us. Help us get the data, so we can show what's really going on.
4

5 What have we figured out? I am going to break down this talk into
6 three sections, the spatial ecology and sex ratios, factors
7 affecting male recruitment, and then our current ongoing research
8 on sex change, movement, catchability, and connectivity, and
9 that's a bit of a mouthful.

10

11 That paper that I mentioned, and the last SSC talk I gave, really
12 ended with this conceptual model of the gag life cycle, and so you
13 have deepwater offshore spawning, mature fish of both sexes, and
14 that's the one time they really get together, and those really
15 long, both distance and time-wise, pelagic larval duration, which
16 seems like a very bad strategy, but apparently works for gag, and
17 then estuarine nursery areas, with sub-adults moving to the
18 nearshore, as they reach about age-one, and you get immature fish
19 in these shallower water, and immature fish can range anywhere
20 from about one to five years.

21

22 Midwater is females, and then these spawning migrations of some
23 females at least, and then the dotted line there shows forty-six
24 meters, and so, in the paper, in that previous study, the deepest
25 we've ever seen a male was forty-nine meters, and that was used in
26 Rachel's master's thesis, but we've since been sampling the middle
27 grounds and sampled some males at forty-six meters.

28

29 The way I've structured, as much as I could, each one of these
30 slides is the hypotheses that we are testing in that first study,
31 in terms of sex change and spatial ecology in gag and what we saw,
32 in terms of the new study and that past study, for each one of
33 them.

34

35 This hypothesis that gag exhibits sex-specific habitat use, this
36 is something that's been really well documented in the scientific
37 literature, and this is not something that we're coming up with
38 this new, but I think it is something that still there are a lot
39 of fishermen that aren't completely onboard with are all nearshore
40 fish really female gag, and what you can see there is our map, and
41 so that's over 2,000 fish. The blue dots are males, and the pink
42 dots are females, and I think you can pretty conclusively see that
43 males are really occurring only in the fifty meters or deeper,
44 more or less, right, and that you have these immature females where
45 you would expect them to be, which is in the shallowest water,
46 which makes sense if your nursery area is estuarine.

47

48 Another hypothesis, and this was something that was raised in SEDAR

1 33, was whether gag spawn only north of 28 degrees. At the time
2 we started doing our research, the only areas that have been
3 documented as spawning areas were Madison-Swanson, and we also saw
4 spawning in Madison-Swanson, and we documented spawning in the
5 Edges as well. In this most recent study, we also documented
6 spawning in Steamboat Lumps and the Sticky Grounds, and it's
7 looking like, you know, the forty break, out to about eighty, if
8 you have the right habitat, you probably have gag spawning there.
9 Interestingly, the spawning season was exactly the same in both
10 areas, February 1 through April 15.

11
12 This slide is really busy, and I apologize for that, but I will
13 unwrap it for you, and so this idea of do females exhibit spawning
14 migrations, but males are resident, there's still a lot that we
15 need to learn about this, but we have been able to show that, yes,
16 at least some portions of the females show these spawning
17 migrations, and how have we figured that out?

18
19 On the left corner, we have that little cycle, and that's the
20 developmental cycle that all fish go through that spawn, and what
21 you see is the early developing stages, and then those are the
22 same colors that are used in the graph to the right of that, to
23 show that the early developing stages are in shallower water than
24 spawning, and spawning is green. Regressing, which is right after
25 you finish spawning, is red, and that's still in deep waters, but,
26 when you get to regenerating, which means you're mature, you've
27 spawned, and you're done, you can see there's a really wide range
28 of depths again, although the mean is certainly still in deeper
29 water.

30
31 Then, if you break that out by age, what you can see is, again,
32 what you would expect, that the youngest fish are in the shallowest
33 water. By the time you get to about five or six, the mean depth
34 is much deeper. Now, again, keep in mind where we were sampling.
35 Most of our samples came from the MPA, and those are deep waters,
36 and so this is not necessarily representative of all gag, and our
37 samples were biased towards those deeper waters, but a key point
38 is that, you know, even in the less-intensive sampling of shallow
39 waters, we have gotten fish as young as eleven in shallow waters,
40 and so it's not just the young fish that are in there, but the
41 proportion of older fish that use the shallow waters, move back to
42 shallow waters, we don't yet know.

43
44 A really important point is the skip spawning, and so skip spawning
45 here means fish that were sampled on the spawning grounds, during
46 the spawning season, and were not developed, and we got really
47 high rates in both studies, and so 32 percent in the Madison-
48 Swanson study, and you can see that up by the Madison-Swanson

1 reserve there, in that map, and 41 percent in the new study.
2
3 Felicia and Chris have a paper suggesting that that's due to sperm
4 limitation. The jury is still out on whether that's something
5 that is a problem, because there aren't enough males, and so
6 they're not developing, and I am not quite sure how you would
7 unpackage that process to prove it one way or the other, but it is
8 of concern, that we have this high rate of skip spawning, and it
9 clearly highlights the fact that adult female biomass is not going
10 to be a good predictor of reproductive output in gag.
11
12 A big take-home lesson, for me anyway, was that sex ratios are a
13 lot harder to estimate empirically in gag than I would have ever
14 guessed. How hard can it be to estimate a sex ratio? That struck
15 me as something that should have been first easy to do.
16
17 Well, first, in gag, it's hard to tell just what sex you've got,
18 for starters, and so in terms of macroscopically looking at the
19 gonads, you literally can't tell if you have a male or a female.
20 I didn't believe this, when Gary Fitzhugh told me this, but it is
21 in fact true. I had looked at thousands of gonads in other species,
22 and I just could not imagine that this would be the case, but, in
23 gag, you can't tell, and, in fact, gag have so little sperm, even
24 in the spawning season, that often you can cut the testes in half
25 and there will be no sperm. This doesn't happen to anything that
26 has sperm competition, like red drum and Nassau grouper. Those
27 fish have tons of sperm. You would always know a male, but, in
28 gag, that's not the case.
29
30 Pigmentation is a pretty good indicator of -- External pigmentation
31 is a pretty good indicator of sex if you have been trained in it
32 and you wait to assign that postmortem, and so, at our workshop,
33 Hayden put on a really nice hands-on experience for fishermen to
34 look at pictures of external pigmentation and guess whether -- Or
35 assign whether they thought that it was a male or a female and
36 then look at the histology, where you could see, and the take-home
37 message is it's really hard to tell, and, if you haven't seen a
38 male with a really true black, rusty belly, it's quite easy to
39 call something male pigmentation that is not, but, if you're
40 trained, you can get to 90 percent accuracy, and that's great.
41
42 The other issue, of course, is that you have the sexual
43 segregation, and so, because of the spatial ecology of gag, your
44 sex ratio on the spawning grounds is going to vary in any given
45 year, based on the number of females that move there, right, and
46 so, if you have a strong year class, because all the fish
47 recruiting from the spawning population are female, that's going
48 to make you look like you have a lower male sex ratio.

1
2 If you have a year that potentially you have more skip spawning,
3 and females don't -- If fewer females move to the spawning grounds,
4 you're going to look like you have more males in your sex ratio,
5 and so it's just really hard to empirically estimate sex ratio in
6 gag.

7
8 That said, this is the results we came up with, and I feel quite
9 comfortable with saying that we did not see anything close to 15
10 percent male in either spawning reserve, right, and so both of
11 them were quite similar, that 5 percent, and what's driving that
12 is not clear. If that is some level of size-specific feedback
13 loop, and you can't get to more than 5 percent, that would be a
14 problem, but it looks like it might be low male recruitment,
15 because A50, and so at age at 50 percent male, is quite high in
16 Madison-Swanson, but you're not getting many young males, and so
17 you're not getting the male recruitment you need, and that's our
18 hypothesis at this point, at any rate.

19
20 Again, you see these ranges in years, and that's because of the
21 spatial ecology, and then you also have very different sex ratios
22 in the unprotected areas, and so, in the Edges, we didn't catch
23 any males during the spawning season, but we had a hard time
24 catching gag in general, and I know that a number of the fishermen
25 at our workshops said that, at least with longline, they catch
26 tons of fish in there, and I am talking with Jenny Mullins about
27 maybe doing some sampling in there, to see how different the
28 answers would be if we had that type of gear collecting the fish.

29
30 Then, in the Sticky Grounds, which was south of Steamboat Lumps,
31 again an open area, but not an area that can be trawled though,
32 just because of the bottom habitat, we had the highest sex ratio
33 of 6.3 percent. It's not a super high sample, but it's certainly
34 looking like sex ratio is better there.

35
36 A50, as I mentioned, in terms of that's the age at 50 percent male,
37 looking at how this varied with study, and so we wanted to look
38 specifically just for the MPAs, and, in Madison-Swanson, as I said,
39 it's quite old, and so thirteen years.

40
41 At Steamboat Lumps, we couldn't actually estimate it, because the
42 oldest fish we captured were females. If you look at the bottom
43 part of that graph, you can see we had a female as old as twenty-
44 four, I believe, and then, interestingly, we also got younger males
45 though, and so, if you look at the top dots there, you can see the
46 ten-year-old cutoff there, compared to Madison-Swanson. Steamboat
47 Lumps had younger males, but it also had these very old females,
48 which is a great indicator that there's a lot we don't yet

1 understand in terms of sex change in these species, but that's not
2 unheard of. Snook is the same thing. They're protandric, meaning
3 they start out male and turn female, and some of the oldest fish
4 that we sampled in snook have been males, and so, just to put it
5 in perspective, we have a lot still to learn there, but, when you
6 pool the data and remove the MPAs, the A50 was 10.4.

7
8 How do those results compare to what we're seeing from other
9 sources? I think that the age comps, and A50, is probably the
10 most robust estimate of sex ratio. You have sample sizes that no
11 individual lab is ever going to meet, in terms of what goes into
12 that, and, based on an A50 of 11.6 years, and that's what it was
13 estimated at that time, and so you can see that our new study has
14 brought that down a bit, it's only 2 percent male. The virgin sex
15 ratio, the male sex ratio, is estimated to be 32 percent, and so
16 that's a little concerning, and that graph there, the bar graph,
17 is from the SEDAR report. There's a table, but it's just showing
18 -- You can see how the sex ratios dive bomb, and it would have
19 been above 15 percent in the 1970s.

20
21 What have other researchers shown? In terms of our own research,
22 if we pool the data in the spawning season, and so we're estimating
23 sex ratio only on the spawning grounds during the spawning season,
24 we get 4.5 percent, but remember that more than half of our samples
25 came from MPAs, right, and so that's probably an overestimate.

26
27 From Koenig and Coleman, a MARFIN study that they had, they also
28 got 5 percent in Madison-Swanson, and so quite similar, and 1.1
29 percent outside of the MPA, and so, again, fairly similar to what
30 we saw in our first study. Burns and Robbins, and this was using
31 longline data, they also got about 2 percent, and so low sample
32 sizes, but that's off central Florida, and also very low sex
33 ratios, compared to our own Peter Hood, who did this study using
34 historic data and showed that the sex ratio was roughly 17 percent.

35
36 If we have a problem with male recruitment, you know, what sorts
37 of things might be going on? So, in terms of the theory of what
38 drives sex change, the main theoretical model is this idea of size
39 advantage, and, basically, if larger fish of a certain sex have
40 much higher reproductive success, they're going to switch sex,
41 right, because they can increase their fitness level significantly
42 if they're a different sex, right, and so this is the main
43 theoretical concept behind sequential hermaphroditism, but it's
44 tightly linked to the species mating system and social structure,
45 and so not all protogynous fishes change sex for the same reason
46 and in the same way, and you have four main triggers, or mediators,
47 that have been proposed: population density, local sex ratio,
48 relative size to others within the social group, and threshold

1 size or age.

2

3 Comparing two different protogynous species that are heavily
4 fished in the Gulf, with very different mating strategies and very
5 different results, in terms of their sex ratios and how well they
6 can adapt to fishing pressure, red grouper are harem, and, in
7 that top graph, you can see that there's a wide overlap of males
8 and females and a fair number of young males. We don't see that
9 with gag.

10

11 In gag, you have significantly larger males than females, and not
12 nearly the same amount of overlap, and much lower sex ratios. We
13 do know that male gag, in general, are not as big as they used to
14 be, and you can see those pictures there. The one on the left,
15 Eric Schmidt provided, and that was a seventy-two-pound male caught
16 in 1985. Think about how many babies that guy could have made,
17 and then the largest fish we sampled -- The two largest fish we
18 sampled came from the two different MPAs, not surprisingly, a
19 forty-pound fish in Madison-Swanson and a thirty-eight-pound fish
20 in Steamboat Lumps. Clearly, between low sex ratios and small
21 males, we do not have as much gag sperm out there as we used to.

22

23 What is the scoop with gag, and what is their mating strategy?
24 The bottom line is we don't know yet. They're not harem, right,
25 and so, in a harem, you're going to have -- Especially if you don't
26 have a lot of harems in close proximity to each other, and, if you
27 remove the male, you have to have quick sex change from female to
28 male, or else the reproductive season is lost for that whole
29 reproductive unit, right, and so that's the blue-headed wrasse
30 that we've all heard about, and they can actually change sex in
31 like ten days, I think it is, and that's also the classic thing
32 that's in the literature about what sex change will look like. It
33 happens during the spawning season, and you're absorbing your
34 primary tissue, and so female tissue, and producing male tissue.

35

36 Gag often change sex outside of the spawning season, and so you
37 don't often see that, and, if you think about it, if they're males,
38 multiple males in one area, which is what they have, removing one
39 male is not going to have that same impact, and you're not going
40 to have that same need for the fast sex change or within that
41 restricted time period, and so gag change sex throughout most of
42 the year, and it looks like they take about two to three months to
43 change sex.

44

45 Why do we only have these larger males? We have some small males,
46 but the big question is why aren't gag adapting like some of these
47 other species to fishing pressure, right? You would think that
48 what they would do is start producing more small males, and that's

1 the million-dollar question.

2
3 There is potential that there is male-to-male competition. It's
4 not something that we have the technology at this point to ever
5 figure out. We do a lot of video work, as I said. Gilmore had
6 thought that he could tell what sex a fish was based on its
7 pigmentation underwater, and that's not the case. That's actually
8 driven by hormones. If you have a lot of agonistic movement
9 behavior, you're going to increase your testosterone, whether
10 you're a male or a female actually, and you get more black pigment.

11
12 This is not something that we're going to figure out anytime soon,
13 but, again, thinking about some of the examples we can pull from,
14 birds being one of the terrestrial vertebrates that are most close
15 to fish, we do see, in some birds, like the sage grouse, that they
16 form leks, and so they have males that come together in groups,
17 and then the females come to that area.

18
19 That's been suggested for some other fish species as well, but not
20 in the same way, and so like, with sage grouse, you have all these
21 males competing with each other and making those cool little
22 dances, trying to get the female to select them. I can safely say
23 that we've never seen anything like that with gag, and I don't
24 think that we ever will, but I do think this idea of whether there
25 is male-to-male competition could be playing a role, in terms of
26 what might be causing our lack of more small males and the ability
27 to adapt. That could play a role, but I think the biggest role is
28 probably in terms of male recruitment, and I will get to that in
29 a minute.

30
31 Again, the hypothesis was that they form spawning aggregations,
32 and I guess I got ahead of myself a little bit with the leks, and
33 we have not seen any evidence of spawning aggregations. Domeier
34 recently updated his definition for that, and it's that you have
35 a four-fold increase in density with the spawning season compared
36 to outside of the spawning season.

37
38 I think there's a lot that we're learning about spawning
39 aggregations from what we think of as the iconic species, which is
40 Nassau grouper, and so they have these very consistent spawning
41 sites, and not very many of them. They aggregate at those sites
42 in huge numbers. They have sperm competition, and so there's sperm
43 all over the place, and you can collect fertilized eggs with
44 baggies, and Scott Heppell does this, and actually look at your
45 fertilization rate.

46
47 There is no other species that does that, and so this idea of
48 thinking that we might have a lot of species that act like Nassau

1 grouper is probably not going to happen, and, on this side with
2 gag, and I will show that in the next slide, even if they do
3 aggregate in small numbers, it does not appear to be at consistent
4 sites and times, but, for the two studies we did, the take-home
5 message being that we did not see a four-fold increase at the
6 spawning sites in the spawning season, and so they didn't meet the
7 threshold for spawning aggregations.

8
9 Then that's the beauty of doing research over multiple years, and
10 so, last year -- Our current research now, and I will talk about
11 that as I get to the end of the talk, but we're using ROVs, with
12 GoPros attached to them, to actually monitor these sites.

13
14 This is a site in Steamboat Lumps that we did monitor in the
15 previous study as well. With ROVs, we're seeing higher numbers of
16 gag, because we can actually drive to the site, and we don't have
17 to deal with the drift issue as you drop your camera system down
18 fifty meters and hope it gets on the right spot, and we actually
19 saw forty-two gag, which was just so incredibly cool, and so we
20 were all incredibly excited.

21
22 Cara, who is our master video reader, and I forced her to read
23 like way too many videos in the past couple of weeks, so I could
24 talk to you about them, and so she was really excited when she saw
25 this, and we hadn't seen anything like this before. This does
26 actually meet the four-fold increase.

27
28 Now, interestingly, we did not see that in any of the other areas,
29 and I will get to that as I get to more of our ongoing research,
30 and so the take-home message for gag is maybe they do form these
31 really small aggregations, and, even in the original Gilmore paper
32 that talked about aggregations, they only talked about groups of
33 fifty to a hundred, and maybe we didn't see that before because
34 the population is in such a level of low abundance that you
35 wouldn't see that, or maybe these sites are very ephemeral over
36 space and time, and so there was a pre-spawning aggregation site
37 in that Madison-Swanson study that Chris said he had seen
38 aggregations at, and we did see an aggregation at that one out of
39 three years.

40
41 At Steamboat Lumps, this is our fifth year that we've been studying
42 this particular site, and it's one out of five years. We don't
43 yet understand what's driving that, that site selection and that
44 particular habitat in a given year, but it's pretty clear that
45 these ideas that reproductive parameters are invariant over time
46 doesn't hold.

47
48 Okay, and so, in terms of sex change, as I said, the understanding,

1 at the time we started doing this research, was that it occurred
2 on the spawning grounds, and mainly during the spawning season,
3 but, in fact, what we found is that sex change could also occur in
4 shallow water, and, although we haven't captured a lot of fish
5 that are transitional, and, in part, that's because gag can
6 transition outside the spawning season, and so you don't get those
7 nice, clean histological indicators like you would in a harem
8 species, and so you see fewer transitionals, but, of the
9 transitionals that we've gotten, twenty-two, out of 2,863, and so
10 we're not talking a lot, we have seen as many in the shallow water
11 as the deeper water.

12
13 This is actually really important, because it means that they're
14 not -- The cue, or the mediator, to change sex is not sex ratio,
15 because those shallow-water fish are all female.

16
17 There is more and more literature coming out in terms of
18 protogynous species in aquaculture systems, where they're also
19 seeing that, and it's more of an agonistic and hierarchical
20 behavior within a female group, and so the biggest, baddest mama
21 is becoming a male in that case, and this is really important in
22 terms of recruitment and thinking about how fishing pressure may
23 impact male recruitment.

24
25 If you really did have sex change only on the spawning grounds,
26 and you had those spawning grounds protected, you would be able to
27 protect male recruitment, but, if you have male recruitment
28 occurring in these shallower waters, and, in fact, the fish that
29 we saw transitional there were smaller than what we saw on the
30 spawning grounds, potentially not enough of those smaller males
31 are making it out to the spawning grounds.

32
33 Going back to our little list of sex change triggers, is it
34 population density? I don't have the data to tell you one way or
35 the other, but, looking at how gag are distributed in those high
36 densities at very small locations, I would guess not, because what
37 they're going to perceive is the density at that specific spot,
38 and that's highly variable. Local sex ratio, clearly not, if you
39 can change sex in an all-female group.

40
41 Relative size to others within a social group, there's some
42 evidence that that may be the case, with those smaller
43 transitionals in the shallower water, and, in terms of threshold
44 size or age, no, that is not occurring. There was, I guess, a
45 hypothesis that they would only change sex if they were larger
46 than 800 millimeters total length, I think, and we've gotten males
47 smaller than that and shown that that was not the case.

48

1 Okay, and so now to our current ongoing -- First, I'm going to
2 talk a little bit about Rachel's master's, and so she used data
3 from SRFS, as well as the at-sea observer program, and it was mined
4 over the years from 2009 to 2019, and she was able to show that
5 most of the fishing effort is in waters that would focus on
6 females, with a peak there in that shallower-water area. She also
7 showed that about 30 percent more fish are caught in shallow water,
8 and so less than twenty meters during the pre-spawning season,
9 versus non-spawning or spawning season.

10
11 Okay, and now to ongoing research, and so we have four sampling
12 areas, and so our past studies were all based on reproduction, the
13 spawning areas, and now we're shifting to try and better understand
14 those fish that actually recruit to the spawning population, and
15 that's in these shallower waters. We're using ROVs for our video
16 sampling, and, again, hook-and-line sampling and acoustic
17 telemetry to track movements, and we have telemetry arrays set up,
18 as well as sampling in four different areas, and so estuarine, and
19 that's Tampa Bay. Those little black things show receivers, and
20 so those are receiver arrays in each of those areas.

21
22 Tarpon Springs, we have an array, and those little bubbles are
23 showing the array. There is thirty of them, and now that's for
24 virtual positioning, and so you get this very fine-scale, high-
25 resolution position accuracy, but super small overall space, and
26 that's three-by-three kilometers, and so there's always tradeoffs.
27 How much does a three-by-three space really represent what's going
28 on? Then we have the Middle Grounds and Steamboat Lumps.

29
30 We're also working with fishermen, and our scientific team as well,
31 with dart tagging fish, the tradeoffs being, with acoustic
32 telemetry, each tag costs us about \$700, and the sample size is
33 going to be relatively small, but you can actually get behavior.
34 With dart tags, you only get those two points, but you can have a
35 much smaller sample size, and we're hoping that we'll be able to
36 begin to get a better idea of these movements off to the spawning
37 grounds.

38
39 It's sad to say that I have not actually had time to analyze this
40 data, which is why this particular graph looks a little bit like
41 data vomit, but those two blue graphs are showing telemetry, and
42 this is really just a first look at it.

43
44 What you can see -- That's from the one from Tarpon Springs, and
45 you can see that the -- We call them abacus graphs, and so that's
46 the horizontal bar graph there, and it's showing that there's
47 fairly high site fidelity. Most of those fish that we tagged were
48 there throughout the year, and some of them are probably right on

1 the edge of the array, coming and going, and the range there is
2 about -- Gosh, what did the range turn out to be? The range was
3 170, or 175, and it was a lot lower than we had hoped for, but
4 acoustic range is actually quite low there, and so it doesn't take
5 too much to move out of range and not be detected.

6
7 Then we did have a couple of fish that were captured there, and,
8 in terms of fish that left early, there was no relationship with
9 size. We weren't seeing larger fish versus smaller fish leaving,
10 and then the upper-right, with all the dots, that's showing
11 positions for each individual fish that was tagged, and so you can
12 see a fair amount of movement within the array, more so than what
13 we would see with red snapper.

14
15 In terms of dart tags, we haven't gotten a lot of offshore recaps,
16 one in our data, when I put together this talk, and then one that
17 came in after this talk was finished, I believe, and only two in
18 the FDM dark tag database that Rachel is also looking at, out of
19 more than 7,500, but we have gotten high recapture rates, and this
20 is in the shallow water, about 10 percent, and I do think, as we
21 talk about discard mortality, we probably want to think about how
22 many times some of those fish getting caught in gag hotspots -- We
23 have several hotspots in Tampa Bay that we are doing research at,
24 and we had one fish that was captured five times, below legal size,
25 and I do think it died after that fifth time.

26
27 We're currently working on analyzing maturity, and also looking at
28 transitionals in those shallow-water samples, and we've built some
29 new collaborations, working with some folks out of Crystal River,
30 and we're thrilled that they're willing to collaborate with us and
31 provide this data, so we can get an idea of what's going on with
32 these fish in that area, as well as Tarpon Springs and the estuary.

33
34 We are seeing some fish that are legal size, you know, a fair
35 amount of legal-sized fish, that are immature, but the jury is
36 out, and we're still doing the analysis on that.

37
38 The main take-aways, and I did have to show this picture, because
39 you have no idea how hard it is to get sperm out of a gag, and so
40 this is one of the few that you could actually strip spawn, and we
41 were trying to strip spawn them to fertilize eggs, to see whether
42 fertilized eggs in fact float, with no success. Apparently
43 fertilizing eggs in gag is also more difficult than something like
44 seatrout. If you put sperm and eggs together in seatrout, you
45 have larvae. In gag, not so much, but the key point being here
46 not so much about how it's hard to get sperm out of a gag, but it
47 takes at least a decade to make a male.

48

1 If what we're concerned about is low male sex ratios, we have to
2 think about that timeframe and what sorts of things we need to be
3 looking at in terms of indicators.

4
5 Combined biomass, if you have some large year classes in those
6 younger fish, and we protect them well, may look really good well
7 before you have a good sex ratio, and I think that's something
8 that we probably want to consider. The MPAs did not help sex
9 ratios recover to 15 percent, and the sex ratio, the virgin sex
10 ratio, is estimated to be 32 percent, and the Edges, which is a
11 seasonally-closed area, as we're thinking about whether it makes
12 sense to close areas seasonally, had the lowest male sex ratios,
13 but that may be in part because our sampling method was not the
14 best sampling method, and there is a caveat there, but, as a
15 posterchild, it's not a really good one.

16
17 Then intense fishing effort in shallow and nearshore waters may
18 represent a bottleneck to spawning population recruitment, and
19 that's the question we're trying to answer now, and we don't have
20 the data yet to make a statement one way or the other, but I think
21 it something that is really important that we better understand.
22 Are we actually fishing so heavily on fish before they recruit to
23 the spawning population that we're not getting the reproductive
24 output and reproductive success that we need?

25
26 Then just a little thought, and this is a paper that is just
27 recently in press. You know, of our species, we have the most of
28 the regions that have protogynous species, basically a third of
29 them, and we have a long way to go to think about how best to
30 measure reproductive potential in those species, and, with that,
31 I want to thank everyone in the MER Lab. A lot of them are here,
32 and so I hope you will get a chance to talk and meet with them.
33 The amount of work that this crew gets done blows me away all the
34 time, as well as all the people who work with us, great fishermen,
35 a range of great fishermen, a range of great scientists and
36 experts, and it's been a lot of fun, and I'm happy to answer any
37 questions. Thanks.

38
39 **VICE CHAIRMAN BARBIERI:** Thank you, Sue. Excellent presentation.
40 It was very thorough, and, given the nature of this section, this
41 agenda topic, right, this section that we are in, because we're
42 going to have four talks on four different issues that are
43 complementary in nature, right, to inform the discussion that comes
44 in Item Number VI -- Where each one of them is addressing a
45 different topic, I would rather, instead of saving questions and
46 discussions for later, address them one-by-one, and so, with that,
47 I'm going to open the floor to questions by the committee. We're
48 going to start with Dr. Crabtree.

1
2 **DR. CRABTREE:** Hi, Sue. Thanks for being with us. That was an
3 interesting presentation. The transitionals, did I see right that
4 you've only seen twenty-two?
5
6 **DR. LOWERRE-BARBIERI:** Yes, and so we have more than that in terms
7 of the ongoing research, but, in those first two studies, all we
8 saw was twenty-two.
9
10 **DR. CRABTREE:** So it's difficult to reach much, in terms of
11 conclusions, about seasonality of where they are, because the
12 sample size is so low, I assume.
13
14 **DR. LOWERRE-BARBIERI:** Definitely.
15
16 **DR. CRABTREE:** Did I also see that, in terms of shallow-water
17 transitionals, there had been four of them?
18
19 **DR. LOWERRE-BARBIERI:** Probably. That's that 1.7 percent, and so
20 it's four divided by twenty-two. I think the key point about the
21 shallow transitionals is that, before we did our research, they
22 didn't think that any fish changed sex except on the spawning
23 grounds, and that you had to be -- That there had to be some
24 feedback loop, in terms of what proportion of males were in that
25 reproductive unit for you to change sex, and so --
26
27 **DR. CRABTREE:** So some of them do transition in shallow water,
28 but, in terms of how prevalent it is and all, that would be
29 difficult to say?
30
31 **DR. LOWERRE-BARBIERI:** That's what we're trying to figure out right
32 now.
33
34 **DR. CRABTREE:** All right, and then the Sticky Grounds -- That area,
35 as I understand it, is not an MPA, and is open year-round, but I
36 think I saw that you saw the highest number of males?
37
38 **DR. LOWERRE-BARBIERI:** 6 percent.
39
40 **DR. CRABTREE:** In the Sticky Grounds.
41
42 **DR. LOWERRE-BARBIERI:** That was based on 140 samples, or 144,
43 maybe.
44
45 **DR. CRABTREE:** Okay, and then I think I heard you say that it takes
46 a decade to make a male, but that would be from going from egg to
47 having a male, right?
48

1 **DR. LOWERRE-BARBIERI:** That's based on the A50, right, and so the
2 original A50 in SEDAR 72 was 11.6, and our most recent assessment,
3 when we included the data from Steamboat Lumps, which showed some
4 smaller males, had an A50 of 10.4, and so a decade before you get
5 50 percent male.

6
7 **DR. CRABTREE:** But, if you had some large females, I think I heard
8 you say that they could transition in what appears to be a matter
9 of a few months, and is that right?

10
11 **DR. LOWERRE-BARBIERI:** Yes, and so those different scales -- So,
12 at the lifetime scale, the youngest male we've seen is -- I think
13 we had one that was four and two that have been six, and we have
14 very good sample sizes for females and males, right, and so the
15 sample sizes that went into coming up with that transition, that
16 A50, are very robust, and that's why I was saying I think the best
17 measure of sex ratio is really the age comps in SEDAR 72, using an
18 A50 of 11.6, in that case. Does that make sense?

19
20 **DR. CRABTREE:** Okay. Thanks, Sue.

21
22 **VICE CHAIRMAN BARBIERI:** Thank you for that. Steve Saul is next.

23
24 **DR. SAUL:** Good morning, Sue. Thanks so much for the presentation.
25 It's really, really interesting, and I think really useful
26 background and knowledge for those of us in the room who are either
27 on the stock assessment side of the equation here and on the
28 management side, but I have a couple of questions.

29
30 I guess I'm trying to think about, okay, and so this is really
31 useful, important information that can help better inform how we
32 assess and manage the species, and so, in my head, I'm thinking
33 about, okay, well how can we utilize this information and the
34 research, as you and your team are rolling it out, to best inform
35 the setup of Stock Synthesis, right, and also, on our end, on the
36 sort of council management recommendation end, how can that best
37 inform our recommendations of catch limits and those kind of
38 things, and so, to that end, I was curious, and I guess one thought
39 is I wonder, and I don't remember, off the top of my head, if this
40 is possible, and I think it is, and I would have to check the
41 manual, but I wonder if there's a need to almost like time block
42 the recruitment parameters in Stock Synthesis and/or also fix the
43 gender switching component of the model to data, right, and not
44 have the model like estimate the gender-switching component,
45 because, if these things --

46
47 If these animals are skip spawning, right, and if, one year, you
48 have a large spawning event, and you have a lot of possible viable

1 offspring, if it's sort of booming and busting from one year to
2 the next, how can we best represent that? I was wondering if you
3 had done any sort of thinking around that.

4
5 **DR. LOWERRE-BARBIERI:** Claudia Friess, who is part of our group,
6 and she's our quantitative ecologist, and so she, as part of the
7 second study -- We had in there to do something like an MSE,
8 looking at some of these parameters, and she worked with Liese in
9 Stock Synthesis.

10
11 She did look at the timing of recruitment, not in terms of --
12 Because you can set that parameter in terms of -- Within the year,
13 right, but not in terms of this idea that -- So we're very focused
14 on year class strength, which makes sense when you think about
15 landings, but, from a reproductive success perspective, that's not
16 what drives reproductive success, and so, if you have reproductive
17 lifespan -- If you're a gag, and you mature at five, and you live
18 until thirty, your reproductive lifespan is twenty-five years.
19 All you have to do is produce two offspring that survive in those
20 twenty-five years.

21
22 If you didn't hit the strong year class year, that's not
23 necessarily a problem, in terms of long-term reproductive
24 resilience and population productivity, and so that's a big change
25 in conceptual thinking that's part of the reproductive resilience
26 paradigm, and I do think there's a lot of things, in terms of Stock
27 Synthesis, that would be helpful to have more of those
28 conversations, and I would be happy to have them with you, and it
29 would be good to include Claudia in them as well, since she's
30 actually done a lot of that work already.

31
32 **DR. SAUL:** That's great. Thank you. Then I guess one other sort
33 of question related is, as Roy pointed out, you mentioned that it
34 takes about a decade to make a male, right, and so I wonder, from
35 like a rebuilding perspective, right, when we're considering
36 rebuilding times and things like that, how much that piece of
37 information needs to be considered.

38
39 You know, if it takes that long -- You know, if our rebuilding
40 time is estimated, from the modeling, as six year, but it takes
41 ten years to produce a male, I wonder how that needs to sort of
42 factor in.

43
44 **DR. LOWERRE-BARBIERI:** Well, I think our rebuilding time is longer
45 than that, right, and isn't it set for --

46
47 **MR. RINDONE:** It's eighteen years.

48

1 **DR. LOWERRE-BARBIERI:** Eighteen years. That's what I thought.
2 Okay, and so I do think this question of -- I heard this in a Gulf
3 Council meeting, actually, of do we want to manage for the fastest
4 rebuilding or the best fishing as we rebuild, and those may not -
5 - Those probably aren't the same thing, and then I think the
6 million-dollar question is whether we think sperm limitation is in
7 fact the bottleneck for productivity in gag, right, and so I think
8 -- I've had all these conversations with Clay about what level of
9 males do you need.

10
11 You know, he brought up sheep and a sheep farm, that you could
12 have one male with a hundred females, and, you know, you don't see
13 that in nature, for a reason, and so I think we need more than 2
14 percent. I do think that, you know, it's just commonsense, or at
15 least it seems that way to me, that, in a protogynous species that
16 takes ten years to produce 50 percent male, and I think the average
17 age is like four or five, and that strikes me as a problem.

18
19 **DR. SAUL:** All right. Thank you. My last question is have you
20 seen any alignment with the skip spawning with any environmental
21 indicators or anything like that?

22
23 **DR. LOWERRE-BARBIERI:** Great question. Hopefully I can get a PhD
24 student to look at that. I haven't looked at that yet.

25
26 **DR. SAUL:** Thank you.

27
28 **VICE CHAIRMAN BARBIERI:** Before I go to the next person in the
29 queue, Dr. Crabtree, did you have something on that point
30 specifically?

31
32 **DR. CRABTREE:** Yes, and just I'm thinking about the time to make
33 a male, but the males come from females already in the population,
34 and so, if we stopped fishing entirely, and so the population
35 recovers, the male sex ratio could potentially recover much more
36 quickly, from large, older females that are already in the
37 population.

38
39 **DR. LOWERRE-BARBIERI:** Exactly, yes, and that's part of my point,
40 in terms of thinking about whether we're trying to rebuild as fast
41 as possible or whether we're trying to have the best fishing while
42 we rebuild. I think those are the tradeoffs that will play into
43 that, right, and so we're not starting at zero. We have a lot of
44 females out there, I think is your point, Roy, right, and so we
45 have a lot of females that can turn into males, that it shouldn't
46 take a full ten years to get there, and we've already decreased
47 fishing pressure, and so we should have more females out there.

48

1 **VICE CHAIRMAN BARBIERI:** David Griffith.
2
3 **DR. GRIFFITH:** Thank you, Mr. Chair. Thanks a lot for that
4 presentation. That was really great, and it was extremely
5 interesting to me. I'm a social scientist, and so I don't really
6 get a lot of it, but it's very fascinating, and this question might
7 be for Rachel, because I'm looking at Slide 31, and it looks like
8 most of the fishing pressure -- A lot of the fishing pressure takes
9 place very nearshore, and I was wondering if there are people who
10 are fishing, or catching, these from shore, and not from boats?
11 Also, I guess, if they're catching them that close to shore -- As
12 I recall, that one slide that had all those little pink dots, and
13 that was mostly females nearshore.
14
15 **DR. LOWERRE-BARBIERI:** It's all females nearshore.
16
17 **DR. GRIFFITH:** What?
18
19 **DR. LOWERRE-BARBIERI:** It's all females nearshore with a sprinkling
20 of transitionals.
21
22 **DR. GRIFFITH:** Okay, and so they are catching mostly females in
23 that zero to nine-meter area.
24
25 **DR. LOWERRE-BARBIERI:** Yes, and zero to twenty I think is the --
26
27 **DR. GRIFFITH:** So is there any shore-based fishing?
28
29 **DR. LOWERRE-BARBIERI:** Rachel is not here, but I am going to let
30 Bev answer that question.
31
32 **MS. BEV SAULS:** Yes.
33
34 **DR. GRIFFITH:** There is?
35
36 **MS. SAULS:** (Ms. Sauls' comment is not audible on the recording.)
37
38 **DR. LOWERRE-BARBIERI:** But people are catching them from the land
39 or are --
40
41 **VICE CHAIRMAN BARBIERI:** Excuse me. Would you mind coming closer,
42 because people online are not being able to hear. I am sorry,
43 Sue, for interrupting, but --
44
45 **MS. SAULS:** So, yes. Based on the life history of the juveniles
46 settling in those estuarine seagrass beds, we see them caught
47 inside the estuaries, including from shore.
48

1 **DR. LOWERRE-BARBIERI:** Not very many from shore though. We fish
2 for them all the time, trying to samples, and we don't get any
3 samples from shore.
4
5 **MS. SAULS:** We do see them caught from shore, but more frequently
6 from boats, I would say, because they're in the seagrass beds,
7 but, at that size, or at that age, they're too small to keep, and
8 so they are largely discarded.
9
10 **DR. GRIFFITH:** Okay. Thank you.
11
12 **DR. LOWERRE-BARBIERI:** Thanks, Bev.
13
14 **VICE CHAIRMAN BARBIERI:** Thank you for that clarification, Bev.
15 Dave Chagaris.
16
17 **DR. CHAGARIS:** Thank you. Great talk, Sue. I wanted to kind of
18 go back to the question that Steve sort of asked, and maybe ask it
19 a little bit differently, about what we can do with the stock
20 assessment models, and so what would you say is the most important
21 life history process that we are not currently accounting for in
22 the stock assessments that we probably should be, regardless of,
23 you know, how it works with SS3, and like should we be thinking
24 more about spatial structure, or, you know, density-dependent
25 effects on maturation and sex changes? You know, what is sort of
26 your opinion on that?
27
28 **DR. LOWERRE-BARBIERI:** For gag specifically, I assume?
29
30 **DR. CHAGARIS:** Yes.
31
32 **DR. LOWERRE-BARBIERI:** Well, I do think that -- You have to think
33 about your response variable, right, and so that was why I brought
34 that up about the combined biomass may not -- If you think you
35 have sperm limitation, and you're trying to address that issue,
36 you need to be looking at sex ratios.
37
38 Now, Claudia did look at some of that. With a 40 percent SPR,
39 you're getting, I think, 20 percent male sex ratio, if we get to
40 the 40 percent SPR, but, again, there's a disconnect between what
41 you're measuring, in terms of biomass, and so I think what's going
42 to happen, and we've seen this with red snapper as well, and so
43 how you assess what's going on with reproduction when a fish is
44 being overfished, versus when it's rebuilding, can be very
45 different, right, and so with red snapper, the issue was that you
46 didn't have the older ages to understand fecundity, and you were
47 looking at this rebuilding, and you're assuming that you get these
48 huge fecundities at age-fifty, but you didn't have any fecundity

1 for fish over age-twelve, and so that was a problem, in terms of
2 predicting what would happen.

3
4 With gag, it's going to be the biomass. You potentially are going
5 to have a lot of female biomass before you accomplish what you
6 need to do in terms of males, and so I think having something
7 that's actually looking specifically at sex ratio is going to be
8 important.

9
10 In terms of the fishing pressure and spatial management, and I
11 know that's a big issue, right, and so I do cringe a little bit
12 when I see pictures of big males captured on social media, which
13 is a little hypocritical of me, I think, because we certainly have
14 gone and sampled a lot of those in those MPAs, but, you know, if
15 there really are that few, how do we protect -- Is it more important
16 to protect the males that are already out there or protect what
17 makes males?

18
19 I personally think, based on what we've seen with two MPAs, which
20 basically gave us great case studies on what happens if you protect
21 the males, that we probably have to do more, in terms of protecting
22 male recruitment.

23
24 **DR. CHAGARIS:** I mean, I would agree with that, too. I mean, it
25 seems like escapement to the spawning population is a --

26
27 **DR. LOWERRE-BARBIERI:** Exactly, and that's one of the things that
28 I talked about with Andy, actually. You know, when you think about
29 red drum, and how we measure them in terms of escapement, that may
30 be something we want to think about with gag, in terms of measuring
31 escapement to the spawning grounds.

32
33 **DR. CHAGARIS:** Yes, and I have one more question. You mentioned
34 this idea of these social groups and how the demographics of those
35 groups might have an effect on whether it transitions or not. At
36 what sort of scale do these social groups exist at? I mean, are
37 they very tightknit? Are they at like the reef level, or is it
38 more of a regional -- I'm just trying to understand like what scale
39 you think this density-dependent process might be playing out.
40 It's not stock-wide, and it's probably --

41
42 **DR. LOWERRE-BARBIERI:** No, and so it's going to be very patchy.
43 It's going to be at the actual habitat patch level, is my
44 understanding. Now, the data it would take to actually show that,
45 I don't have, and I probably won't in my lifetime, you know, and
46 that's the problem, because you can get some of that with acoustic
47 telemetry, where you're actually tracking, and I showed, in that
48 very small area in Tarpon Springs, most of those fish were staying

1 there for a full year, right, and so you can get that level, but,
2 once they start moving, and whether you would have some level of
3 connectivity of reproductive unit at a larger spatial scale -- I
4 think that's doubtful, and especially when you think about what we
5 were thinking about some of those hotspots and showing like that
6 one site in Steamboat Lumps, where, all of a sudden, we're seeing
7 these high numbers that we never saw before, and this idea of
8 ephemeral aggregation spots for gag, and so that would suggest
9 that this is not something that you have that it's always this
10 amount in this place.

11
12 Even in terms of -- The same thing with our red snapper work, and
13 trying to predict what would be a hotspot -- I know that fishermen
14 are very good at this, and maybe scientists aren't as good, but,
15 you know, that spot in Steamboat Lumps, where you saw the forty-
16 four fish, is not something that jumps out if you look at a habitat
17 map, that you're like, oh, that would be a hotspot.

18
19 Now, there is an artificial reef in Steamboat Lumps, which is a
20 bunch of tires, and it's not the most attractive artificial reef,
21 and we do see fairly high numbers there, but not as high as that
22 site I showed you, Site 14, which is like a little ledge. Why
23 that's the hotspot -- That's been a consistent hotspot, and we've
24 actually sampled it consistently now for five years. Why is
25 unknown.

26
27 I think, going back and reading some of Bill Lindberg's work, and
28 I had hoped to get a call into him before this presentation, but
29 I ran out of time, and thinking about his work with his casitas
30 and the size and the number of fish that would go to a specific
31 site and stay there -- I want to go back and talk to him a little
32 bit more about that, and then Will and I have that study, and we
33 have acoustic telemetry set up with that same area, and it's for
34 discard mortality, but with telemetry, and, once we have that
35 telemetry data, we're going to try and analyze some of that as
36 well, to get a better idea. I guess that was a very long answer
37 to I don't have the answer.

38
39 **DR. CHAGARIS:** No, I got it. Thank you.

40
41 **VICE CHAIRMAN BARBIERI:** Ryan.

42
43 **MR. RINDONE:** Thank you. Sue, the papers that you had referenced
44 in your presentation, once you're done, if it's possible, if you
45 could send those to me, and we'll get those distributed to the
46 SSC, and I think there was -- I will ask Harry, but there was a
47 couple that Harry Blanchet had specifically asked about.

48

1 **DR. LOWERRE-BARBIERI:** Okay. Sure.
2
3 **MR. RINDONE:** Just so that we pass those around and SSC members
4 can review those, if they like.
5
6 **DR. LOWERRE-BARBIERI:** Sure. I'm happy to, and so just send me -
7 - I think I may have cited a lot of papers there, and so tell me
8 which ones those are.
9
10 **MR. RINDONE:** I can peel through it, and I'm sure that we can get
11 a list from the SSC.
12
13 **DR. LOWERRE-BARBIERI:** Okay. Sounds good.
14
15 **VICE CHAIRMAN BARBIERI:** Dr. Frazer, to that point?
16
17 **DR. FRAZER:** So many questions, and I will probably warrant a beer
18 or two, but I just was curious, you know, what your feeling is
19 with regard to the life history and ecology narrative of gag, that
20 it might be an artifact of decades and decades of intense fishing
21 pressure, and the reason I ask that is because, if you were to go
22 take a walk around, you know, some of old bait shops and, you know,
23 convenience stores that are all along the Gulf coast, and you were
24 to look at pictures of like the one you showed from Eric Schmidt,
25 right, where large, presumably males, right, you know, based on
26 the fact that they were keeping those fish and did look at the
27 gonads, and they had pretty characteristic rusty bellies -- I mean,
28 my personal feeling is that gag were probably distributed -- Males
29 were more evenly distributed in the shallow waters historically,
30 and that's my personal opinion, just based on that, and so I just
31 was wondering if what we're seeing today is a consequence of
32 sustained fishing pressure, and how might that affect how we look
33 at these fisheries-related problems? That's the first question.
34
35 **DR. LOWERRE-BARBIERI:** Well, great question, and I think that's
36 something we have to think about with any of these species, right,
37 and it's not like we just started fishing them yesterday. With
38 gag, in terms of historical pressure, I think, you know, that's
39 something that I wonder about, in terms of the catch rates off of
40 Tampa Bay. We have to work really hard to get our twenty fish
41 that we're acoustically targeting implanting in Tampa Bay,
42 compared to Tarpon Springs, compared to Crystal River.
43
44 I think there's a lot that we don't understand there, and part of
45 that might be historic fishing pressure, and part of that might be
46 the actual ecology of gag.
47
48 In terms of whether there would have been males in shallow water,

1 I can't think of a conceptual model that would suggest that. I
2 mean, we know that they're protogynous, and so we know that all
3 the juveniles -- All immature fish will be female, and we know
4 that. We know, with any species, whether they're protogynous or
5 not -- Like think about red snapper.

6
7 You see younger fish in shallower water and older fish in deeper
8 water, and so I think that it makes sense that, if there were going
9 to be male -- If we don't have males in shallow water, because of
10 fishing pressure, it would mean that somehow we selected for males
11 over females, and had higher fishing mortality on males than
12 females at those same young ages, and that fish had to be
13 transitioning at a lot younger than we are ever seeing for that to
14 actually occur.

15
16 We haven't seen anything like that, and I know that there was, for
17 a while -- That's what was so interesting about gag, is there was
18 so much that was out there, in terms of the accepted ecological
19 knowledge about gag, and one was that males feed much more
20 voraciously than females, and that we have in fact selected more
21 for males and had higher fishing mortality, and we actually looked
22 at that, and, actually, I suggested that somebody in my lab give
23 a talk on how to catch a male, because we looked at that
24 statistically, and, in fact, there's nothing to it. You are not
25 having a higher probability of catching a male over a female, and
26 so I don't think so.

27
28 I think that's literally just the way their spatial ecology and
29 protogynous life history intersect, that you do in fact only get
30 females out to about fifty meters or so.

31
32 **DR. FRAZER:** Okay, and so then one of the things -- In one of your
33 earlier slides, you showed potential triggers for sex change, and
34 there were four of them, and the last one was a size or age. Now,
35 is that simply bulleted as a hypothesis, or is there actually an
36 example of an age, or a size-based, trigger for sex change in fish?

37
38 **DR. LOWERRE-BARBIERI:** So, whether you can actually have a size or
39 age threshold, and that's been demonstrated in other species, and
40 is that what you're asking? Not that I know of, and I think that's
41 more theoretical than -- I have not read any literature that
42 actually showed, for any species, a threshold. I think that's
43 more something that in the 1980s and early 1990s, when some of the
44 size-advantage theory was being developed, the 1970s or so, that
45 they thought that might be the case. I don't think that's been
46 shown for anybody, and it makes sense, if it's a mating strategy
47 and social interactions, that it wouldn't be.

48

1 **DR. FRAZER:** Thanks a lot. I didn't want this to feel like a
2 congressional hearing or something.

3
4 **VICE CHAIRMAN BARBIERI:** Very good questions, and very good points.
5 Consider our next agenda item, Agenda Item VI, and we're going to
6 be discussing the possible management actions that are going to be
7 taken, and they integrate, you know, all the components of these
8 talks that we're going to be hearing for the first part of the
9 meeting, and so this is the time to ask those questions, and, with
10 that, I will move on to Doug Gregory.

11
12 **MR. GREGORY:** Good morning, Chair. Thank you, and thank you very
13 much, Sue. This is one of the most comprehensive analyses of gag
14 that I've seen, and I greatly appreciate it. One of my interests,
15 from the beginning, was the sex ratio thing, and it seems, to me,
16 that your approach is probably giving us the best numbers for sex
17 ratio, because they're coming from the spawning area and during
18 the spawning season.

19
20 The only way to get something more definitive would be to sample
21 the actual aggregation, and, if what you said earlier is true for
22 an aggregation that you could find and sample, that males and
23 females would bite the hook equally, that would be, you know, the
24 perfect measure of sex ratio for reproduction.

25
26 The thing that -- The historical stuff is not that definitive, and
27 Hood found 17 percent males, but he sampled the entire year, and
28 not just during the reproductive season, and we don't -- I couldn't
29 tell, from just glancing at the paper, where the data came from,
30 and so it wasn't sampling the reproductive habitat specifically,
31 and, in his paper, he references a Maclaren paper from 1964 that
32 showed 6 percent male, and so, you know, the historical stuff is
33 all over the map, and so what you're doing is the most definitive,
34 and, at some point, we'll probably get to the point of what sex
35 ratio is really needed.

36
37 In the beginning, and this is not a criticism of anything you've
38 done, but it's something that came up in the stock assessments
39 back in the 1990s, when sperm limitation was first proposed as a
40 problem, and, at that time, we were experiencing the largest
41 recruitment that we had observed in the stock assessments, and,
42 granted, it wasn't a long history of stock assessments, and, if
43 you look at the recruitment trends now, like in your very first -
44 - The recruitment was doing great, but something happened in the
45 late 2000s, and particularly in 2010, that knocked everything in
46 the head, and I think that trend is true whether you include males
47 or just look at females, and so that's not pertaining to what the
48 ratio is, or does the ratio even have an impact, but we had this

1 ten-year period or so of high reproduction, during a period of
2 supposed low sex ratios, and so basing management on what the sex
3 ratio is, to me, is very nebulous, but it's an important parameter
4 for us to search for, and you've done the best in tracking that
5 down.

6
7 I just wonder, and have you -- Do you know of anybody, or does
8 your team know of anybody, that has studied the potential
9 contamination of the reproductive organs or of the larvae
10 themselves, because this collapse of the fishery, in about 2010,
11 suspiciously coincides with the Deepwater Horizon oil rig
12 disaster, and gag are reproducing in the northeastern Gulf, not
13 that far away from that oil spill, and I'm wondering if that's a
14 potential culprit in the recent decline, the last ten-year or
15 twelve-year decline, of gag, in conjunction with possibly a low
16 sex ratio, and so I don't think that sex ratio explains it all,
17 but something is definitely happening to the population since 2010,
18 and I don't know of any evidence of contamination that would affect
19 reproduction, and I haven't heard anybody talk about that, and so
20 I was curious if your team is aware of anybody that's doing that,
21 and, if so, it might be worth looking into, but, again, thank you
22 very much. This is quite extensive, and very educational, and I
23 appreciate it.

24
25 **DR. LOWERRE-BARBIERI:** Thanks, and so I think a couple of really
26 important points you made there, right, and so, first, in terms of
27 recruitment, and that's part of the whole idea of the reproductive
28 resilience paradigm, in marine fish, if you get to the point that
29 you're getting really poor recruitment, and sustained poor
30 recruitment, you potentially are close to the point of a collapse,
31 and so you can get good recruitment when you have a stock that's
32 still in really -- That's in trouble.

33
34 That's because that reproductive success is impacted, and it's not
35 just internal drivers, right, and there is a level of environmental
36 driver that is going to impact how many of those fish -- Especially
37 when you think about gag and where those fish have to get to, the
38 eggs and larvae, and, if we go back to that very first -- The third
39 slide or something, and those were the initial dispersal models,
40 and you can see how different, depending on your oceanographic
41 conditions, you might get, in terms of -- Mandy can speak to that
42 better than I can, actually, because she's done dispersal models
43 for a lot of fish, and Hannah even better, as she's going to be
44 working on this for her PhD.

45
46 Just looking at that, and that's one of the things that Hannah is
47 going to specifically be looking at, is oceanographic conditions,
48 and what does the dispersal model predict, in terms of recruitment

1 strength, and then what do we see, based on our fishery-independent
2 monitoring of juvenile abundance, and does it agree, and so that's
3 just to speak to the fact that you could get good or poor
4 recruitment, and it could have a lot to do with environmental
5 oceanographic conditions.

6
7 In terms of sex ratio and poor recruitment for the past decade or
8 so, that's a great point, because it looks like sex ratio has been
9 fairly low over that whole time period, right, and so you can't
10 blame the past decade of poor recruitment specifically on decreased
11 males.

12
13 One other caveat that I do want to put out there, in terms of
14 males, and so the only way, from what I see with the data that
15 I've looked at, that we could potentially have a higher male sex
16 ratio than what we are seeing, higher than that 2 percent, would
17 be if in fact there are more larger fish in deeper waters, and
18 we're not getting those integrated into our age comps in the stock
19 assessment, and we also didn't get them in the data that we
20 sampled, and so there is potentially more males out there in deeper
21 water, and that would be the one thing that came up at the workshop
22 that we talked about with the longliners. That would be the one
23 thing that I think would potentially result in more males than
24 what we're seeing with that 2 percent.

25
26 Okay, and so then, in terms of recruitment and the oil spill, yes,
27 and so the interesting thing is, if you look at the recruitment
28 indices, versus what we see in terms of just age comps from our
29 research in the MPAs, in Madison-Swanson, you do see this -- In
30 2011, you see a really low year class. It jumps out at you,
31 compared to what you would expect based on the ages we were seeing.

32
33 We don't see that in Steamboat Lumps. We didn't see a signal from
34 red tide, the 2005 red tide that was so bad, and we didn't see
35 lower than expected numbers for that year. Did the oil spill have
36 an effect? I don't know. Certainly it could have, in the sort of
37 Madison-Swanson area, and I wouldn't think that it would have in
38 the Steamboat Lumps area, and I think we have spawning along that
39 whole area, and so, for a long time, I think we kind of thought of
40 gag as spawning -- Almost as if they only spawned in Madison-
41 Swanson, but that clearly isn't the case.

42
43 I don't know if that answered your question, but I think you
44 brought up some really good points, in terms of sperm limitation
45 and is that completely confirmed, and the only thing that I think
46 would potentially change that answer would be if there's more males
47 in deeper water that we're not getting sampled, and they're also
48 not getting sampled for the age comps in the stock assessment.

1
2 In terms of looking at impacts on the physiology of the gonads and
3 reproductive success, we have not looked at that, but that is a
4 great point. We do see a number of females that do not look very
5 healthy, in terms of their -- They have lots of parasites, which
6 that's not necessarily a problem, and we see that in a lot of
7 different fish, but they look unhealthy. They look as if they're
8 not actually producing the number of oocytes that you would expect
9 in other species.

10
11 I couldn't tell you what's driving that, and maybe that is a great
12 point, and we should talk to somebody who does fish health and get
13 a better idea on some of those indicators.

14
15 We do also see females that have plugs in them, and what I mean by
16 that is they were in the process of spawning when they got
17 captured, presumably a stress response, and they didn't release
18 those eggs, and, when that happens, all those eggs stay in the
19 ovary and to be reabsorbed, and it causes a plug, and literally
20 that fish can't spawn anymore. This seems to be fairly common if
21 you were on a longline and stressed and then got off. Gary Fitzhugh
22 noticed that in gag as well. Great points, and I guess we'll be
23 in business doing research on gag for a long time.

24
25 **MR. GREGORY:** Thank you very much. I appreciate it.

26
27 **VICE CHAIRMAN BARBIERI:** Yes, and thank you, Sue. Mike Allen.

28
29 **DR. ALLEN:** Thank you, Mr. Chair. Sue, this is a really insightful
30 talk. Thank you, and congrats on this research, and so I wanted
31 to be sure that I understand. With harem-forming species,
32 generally we think about them being able to transition sex
33 relatively quickly, right, and that's somewhat of a compensation
34 mechanism, right? If there's harvest, then somebody else can
35 switch sex and they can spawn, but you're saying, with gag, it's
36 a much longer lag time to sex change, and so they're not able,
37 within a year, to compensate for loss of a male and make a change
38 in that spawning season, and is that -- Am I understanding that
39 right?

40
41 **DR. LOWERRE-BARBIERI:** Yes, and so their whole reproductive
42 strategy did not evolve to be able to quickly replace the loss of
43 one male, right, and so the same thing with anything that
44 aggregates, like black sea bass, which is also protogynous, and
45 so, in the harems, they're going to be able to adapt better to age
46 truncation from fishing.

47
48 **DR. ALLEN:** Okay. Thank you.

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VICE CHAIRMAN BARBIERI: Ryan, did you have --

MR. RINDONE: We were just mumbling to ourselves over here about what you had said, Sue, about the mature females who were, you know, rich with eggs, and then they're caught, and then they have this plug developed. If you could elaborate a little bit on that, and, you know, if that fish can never spawn again, and is that --

DR. LOWERRE-BARBIERI: No, it can spawn, and it looks like it takes about a year to reabsorb all of that, and so, typically, unovulated oocytes -- Most fish that are batch spawners reabsorb those, and they have an overproduction and they reabsorb those at the end of the spawning season, and they do that relatively quickly, and that's not a problem. They're in the follicles, and so there is good circulation and blood flow to reabsorb that, but these oocytes have been ovulated, and so they're actually eggs in the lumen of the ovary, and stress -- There are papers from the 1970s talking about the stress effect if you capture a fish that was in the process of spawning.

They won't release those eggs, and so, if you don't release those eggs, and then what it takes -- You will end up seeing this necrotic mass, and it's kind of nasty actually, because it takes much longer to reabsorb that once those are outside of the follicle, and so that spawning season is shut down, but that wouldn't keep that fish from ever spawning again, as we know. Now, I shouldn't say that I have followed an individual over time, to say that, yes, that female reabsorbed all those and spawned again, but that would be my educated guess.

MR. RINDONE: Do you think that it's possible that a similar effect would be had for males, if they undergo a similar amount of stress? You know, would they stop producing sperm for any reason? Would they skip spawn as a result of undergoing, you know, a similar stress scenario?

DR. LOWERRE-BARBIERI: Great question. I don't have the answer to that. I know they did a lot with cod, looking at more of the male dynamics, and so, for the most part, we haven't -- In fisheries reproduction, we haven't looked much at males, is the bottom line, because all of our models are based on female reproductive potential, and so there has been some work with cod, which, of course, cod and salmon are the species that we've studied everything in, and, with cod, you can have some stress response and some skip spawning of males.

That's about how much I remember, and that was from a conference

1 that I went to in 2009, I think, and so, in terms of gag, I wouldn't
2 expect anything like a plug, just because the hydrated oocytes, of
3 course, have major energy content, and so I'm guessing, if you're
4 thinking you're in a situation where it's life and death, you're
5 thinking that I want to hold onto these, because, even if it takes
6 months to reabsorb them, I'm keeping this energy, whereas sperm
7 have much lower energetic values, and so it's not the same.

8
9 It's not apples to apples, and so I wouldn't expect a plug like
10 that, in terms of males, but, you know, one of the things that
11 I've thought about, again, maybe having a student doing is, you
12 know, UF has a lot of expertise in agriculture, and so they have
13 the expertise to look at sperm quality in horses and cows, and to
14 see about maybe applying some of those techniques in terms of male
15 gag sperm.

16
17 What I mean by that though, in terms of what I was thinking in
18 terms of research, is looking at whether you have sort of a male
19 boff effect. Do those really big, older males not just produce
20 more sperm, but higher-quality sperm, but, again, I guess that's
21 -- I'm not sure that I have time before I retire for all those
22 graduate student projects that I am ready to send them on to go
23 do, but --

24

25 **VICE CHAIRMAN BARBIERI:** Thank you for that. Dr. Simmons.

26

27 **EXECUTIVE DIRECTOR CARRY SIMMONS:** Thank you, Mr. Chair. Thank
28 you so much for the presentation. It's fascinating, and there are
29 lots of questions, and so you mentioned the transition, finding
30 the transitional fish outside of the spawning season, and do you
31 have a particular month? I mean, you didn't have high sample size
32 on that, but do you think we're doing enough sampling outside of
33 the spawning season and getting the gonads to capture that, if
34 that could be one of our data gaps, perhaps? Could you expand on
35 that?

36

37 **DR. LOWERRE-BARBIERI:** Great question, and so our current research
38 is trying to better answer that, and, you know, what are we
39 missing? Why are we getting so few transitionals, right, and, in
40 large part, in terms of trying to sample these shallower waters
41 than we've sampled before, because we do have good sample sizes
42 for the offshore, although albeit those are from December through
43 May, and so what we don't have is good summer samples from the
44 spawning grounds, and so that would be an area that it would be
45 good to get a better idea.

46

47 It has been hypothesized that -- It was hypothesized that you would
48 have the highest transition rates in April and May, right after

1 the spawning season ends, and we only sampled through May, and we
2 did not see that signal at that time, but, again, we saw very few
3 transitionals.

4
5 Of course, with the results of SEDAR 72, it's -- There are some
6 new challenges, in terms of figuring out how to get samples and
7 how to work with people and what to do in the future, but, again,
8 that's one of the big things that came up at the workshop, and so
9 the sample sizes you really need to answer those questions really
10 probably have to be fisheries-dependent and some large
11 collaborative effort to make that happen, and I do think that's
12 really important.

13
14 **VICE CHAIRMAN BARBIERI:** Yes, Dr. Simmons.

15
16 **EXECUTIVE DIRECTOR SIMMONS:** Thank you, Mr. Chair. Thank you for
17 that, and so, a lifetime ago, ecology was one of my favorite things
18 for fish as well, and so, for triggerfish, I'm just thinking about,
19 you know, their spawning behavior and what I observed when I was
20 working on my degree, and I know, you know, they form harems, those
21 species do, but they don't change sex, which is very unusual for
22 forming a harem, in the fish world anyways, and so one of things
23 that we noticed is, when they're forming those harems -- You know,
24 a lot of triggerfish, they're very territorial, and they're chasing
25 the other males away from that harem, and so my question is have
26 you observed, on any of the videos, during like that peak spawning
27 time when you find those harems -- Is there aggressive behavior
28 that you guys have seen on the videos that could be chasing the
29 other males off the reef?

30
31 **DR. LOWERRE-BARBIERI:** First, I have to say that gray triggerfish
32 is my other favorite species, in terms of understanding
33 reproductive strategy.

34
35 **MR. RINDONE:** Oh, god. Now there's two of them.

36
37 **DR. LOWERRE-BARBIERI:** One thing about reproductive resilience,
38 and looking at reproductive traits, and so, in that paper that I
39 just mentioned, that's what we did for all the federally-managed
40 species, but the ones that pop out are the protogynous species and
41 gray triggerfish. Gray triggerfish are the only ones that also
42 have demersal eggs and parental care, and it's a big difference.

43
44 Okay. That said, do we see agonistic behavior between males, and
45 so we -- As I mentioned, we can't really tell what is a male
46 underwater. We don't usually see that behavior, although I'm happy
47 to say, in the thousands of videos that I made Cara read in the
48 past two weeks, she did see that behavior, and there are videos

1 showing that, but, in large part, because that's rather rare, and
2 we don't usually see that.

3
4 Again, it's always the chicken-or-egg, right, and so Nick Farmer
5 asked me, when I said, look, I don't see gag forming aggregations,
6 and they certainly don't form spawning aggregations the way we
7 think of spawning aggregations, and it doesn't sound like they
8 ever did, but Nick was like, well, how much do you think the low
9 abundance, the current low abundance, is impacting what we're
10 seeing, and so maybe you would see more of that if you had more
11 males out there.

12
13 If you really have 2 percent, there may not be enough males to
14 fight with each other, and who knows, and so I think that there's
15 -- It's a great question, and it's very hard to get the behavior.
16 We also -- I mean, I can't tell you how much effort we put into
17 trying to see actual reproduction in gag, our cameras at different
18 depths, and, I mean, I can tell you that that was a passion, a
19 mission, that we were on, to try and see -- We never did, and so
20 it's just very difficult.

21
22 I should add that, also, studying gag with video is difficult in
23 general. They're actually incredibly camera shy, and so they're
24 not at all like red snapper, that just come zooming in and bopping
25 on your -- Gray triggerfish too, actually, but gag are typically
26 right on the edge of what you can see, and so even our ROV surveys
27 for Tampa Bay are probably not meaningful, because the visibility
28 is not good enough, and even in Tarpon Springs the visibility may
29 be impacting what we can see, and so gag are really difficult to
30 study.

31
32 There's a reason why people haven't done these studies, I guess is
33 a -- It takes this iterative process, and multiple research
34 projects and building on them, I think, and it's not something you
35 can do a three-year study and figure it out, or certainly my group
36 couldn't do a three-year study and figure it out, I should say.
37 We haven't figured it out. There's a lot of questions still.

38
39 **VICE CHAIRMAN BARBIERI:** Thank you, Sue. Great presentation, and
40 great discussion, and we need to move forward, because we have a
41 lot of other important presentations today. A quick break? Okay.
42 Let's take a five-minute break then, and we will reconvene at
43 10:15.

44
45 (Whereupon, a brief recess was taken.)

46
47 **VICE CHAIRMAN BARBIERI:** Okay, folks. If you would please return
48 to the table, SSC members. We are ready for our next presentation,

1 and I hope you folks appreciated that this was a ten-minute five-
2 minute break, but we need to reconvene and get back into our
3 business, and so, with that, I would like to invite Dr. Angela
4 Collins to come to the podium, and she's going to give us a
5 presentation on the effects of recreational catch-and-release
6 angling and the survival of gag in gear and strategies designed to
7 reduce barotrauma. Hi, Angela, and thank you so much for coming
8 to join us.
9

10 **EFFECTS OF RECREATIONAL CATCH AND RELEASE ANGLING ON THE**
11 **SURVIVAL OF GAG, AND GEAR AND STRATEGIES DESIGNED TO REDUCE**
12 **BAROTRAUMA**
13

14 **DR. ANGELA COLLINS:** My name is Angela Collins. Hi, Luiz, and
15 thank you guys for having me, for inviting me to talk about this
16 work. We're going to take a step back a little bit, and we're
17 going to be less theoretical, and this was a straightforward three-
18 year project that was basically a response to stakeholder request,
19 and it was a funded MARFIN initiative, and it happened almost a
20 decade ago, and so I'm laying the stage for some relatively dated
21 data, and I'm really happy that Sue talked before me, because that
22 was a really nice way to set the stage.
23

24 I don't have to give you guys any background at all on this fish.
25 Judging by the audience that I'm talking to, I don't have to give
26 you much background on this fish anyway, but this is basically,
27 again, a three-year MARFIN project that we did on the West Florida
28 Shelf. It occurred between 2013 and ended in 2017, and, again, it
29 was funded by MARFIN, and I just have to give a shoutout to all of
30 those NMFS cooperative-research-funded projects. I think that
31 engaging stakeholders in the data collection process is one of the
32 most efficient ways to get at some of these questions.
33

34 Basically, the rationale behind this work was stakeholders felt
35 like some of the catch-and-release mortality estimates that were
36 being utilized in stock assessments at that time were not
37 necessarily the most relevant or reflective of what was actually
38 happening in the field and on the water.
39

40 A lot of those data, at that time, had been based on short-term
41 studies or relying on those tag recapture data that really, like
42 Sue said before, only give you like a two-point snapshot in time,
43 and, a lot of times, those lab studies, or some of those pieces of
44 work, didn't really reflect what was actually happening in the
45 field, and so this project was written with the requests of these
46 stakeholders in mind and basically utilizing folks that were on
47 the water regularly catching gag grouper on the West Florida Shelf,
48 and we used this cooperative research to basically utilize acoustic

1 telemetry to get at some of those longer-term, more finite data of
2 what was happening after the catch-and-release event. Then we
3 were also evaluating how fish behaved, based on whether or not
4 they were vented or descended.

5
6 This work, again, was done on the West Florida Shelf, and I think
7 that that's relevant here, especially because this is where the
8 majority of the recreational landings are taking place, and we
9 were also in relatively shallow water inside of forty meters.

10
11 This was our study area back then, again from 2014 to 2017, and we
12 had twenty-five acoustic receivers out there, ranging in depth
13 from shallow, inshore waters, at about forty feet, all the way out
14 to like 130, and, again, we used recreational anglers who were
15 targeting gag specifically on rod-and-reel. All the fish that
16 were caught, we basically used a qualitative visual assessment on
17 their barotrauma severity, and we fit them with tags, and those
18 tags were the acoustic pingers, those traditional little VEMCO
19 receivers and pingers that you hear about in all of the acoustic
20 telemetry talks these days, but that pinger was basically giving
21 a data point every one to three minutes.

22
23 It gives the fish's ID, its date, and the position within the water
24 column, and I think that pressure sensor data is one of the most
25 important parts of these telemetry studies, because it's not just
26 showing that the fish is there, but it's also showing that fish is
27 moving up and down within the water column, and so you can tell
28 that it's actually moving around after you've let it go and not
29 just laying on the bottom and pinging away. Then, obviously, also
30 the traditional ID tag that could be used for recreational
31 recapture, or commercial recapture, reports.

32
33 The fish were evaluated for signs of barotrauma and scored by
34 severity qualitatively, basically from zero to three, and, if
35 barotrauma warranted some sort of action, they were either vented
36 or they were descended, and, at this time, a lot of that discussion
37 was ongoing on the differences between venting and descending.

38
39 A lot of anglers were just starting to hear about descending as a
40 potential option for barotrauma mitigation, and venting had
41 traditionally been the way that most anglers were dealing with
42 barotrauma, and so we were doing one or the other, and, again, we
43 were only doing it if the fish looked like it needed it, because
44 most recreational anglers, when they catch a fish, they are not
45 going to do something unless it looks like the fish is actually
46 going to benefit from some sort of mitigation, and so, if it could
47 be thrown back in without having an action taken, we did that. We
48 basically wanted to mimic exactly what was typically happening on

1 these boats anyway.

2

3 We tagged about ninety fish, and, at that time, we were really
4 excited about it. Like Sue mentioned before, the price tag on
5 these acoustic transmitters is about \$700, and so we were really
6 happy to get ninety individuals tagged.

7

8 We did this, again, over a three-year period and got a nice range
9 of sizes, from seventeen to thirty-two inches, and so note that
10 that legal size limit is at 610. You can see, on the top graph
11 there, the date, along the Y-axis, and the number of fish tagged
12 is indicated by the vertical bars, and then we put temperature
13 there just for reference, because barotrauma is impacted by water
14 temperature. When you get into those hotter temperatures,
15 typically barotrauma severity increases, and so that's just kind
16 of there for reference.

17

18 Then you can also see, on the bottom graph, kind of how the number
19 of fish was distributed over the depth range of sites that we
20 fished, and so we had a nice spread of legal and sub-legal discards
21 in all three of those depth ranges, and we tracked fish from
22 periods of anywhere from one to 794 days, which is about the length
23 of the battery life on those acoustic tags that we were putting on
24 them.

25

26 I say this every time I give a talk about barotrauma, but it comes
27 as no surprise, to anyone who remembers high school physics, that
28 barotrauma gets worse the deeper you go, and we saw that with gag,
29 too. If you look at the graph on the left, barotrauma severity is
30 increasing on the Y-axis, and then the depth is increasing on the
31 X-axis, and you can see that the fish had much higher levels of
32 barotrauma as we got into deeper water.

33

34 The barotrauma didn't seem -- The severity of the barotrauma, when
35 we looked at that according to fish size, didn't really seem to
36 have any significant differences, depending on the size of the
37 fish, but you can kind of see how that spread worked out there,
38 and also see that we did have a nice size range of fish sampled
39 for those shallow, inshore shelf gag.

40

41 What's interesting about this is that total monitoring period,
42 based on barotrauma, didn't have any real significant differences,
43 and so whether or not they had more severe levels of barotrauma,
44 or no barotrauma identified visually at all, there was no
45 significant difference in the total amount of time that we tracked
46 these animals, and, again, these total monitoring periods are
47 indicated by those box plots. The solid bar represents the mean
48 monitoring period, and then the non-solid bar is the median, but

1 you can just see that, on average, we're following these fish at
2 these sites for about three months. That's pretty much like the
3 average period that they're staying put, but some fish did stay
4 put for periods extending over a year.

5
6 If you look on the graph on the right, what we really wanted to
7 get at, and, again, what we were trying to identify is that like
8 immediate mortality after catch-and-release, right, and so, based
9 on the acoustic telemetry data, you're thinking, well, if your
10 fish dies within the first two hours, that's probably acute
11 mortality.

12
13 If you track a fish for somewhere under two weeks, you know, maybe
14 you could consider that mortality, if it disappears after two
15 weeks, according to that catch-and-release event, but, if you've
16 got a fish for two weeks or more, we felt pretty confident that
17 mortality wasn't happening immediately after catch and release,
18 right, and the cumulative effects of repeated catch and release
19 might be a different story, but, in this case, we were basically
20 trying to evaluate which fish do we track for less than two days
21 and which fish do we have for periods that are longer, and you can
22 see that we had about eight individuals, or six individuals, that
23 we lost within two days.

24
25 The rest of our fish we monitored for extended lengths of time,
26 and so 90 percent of our fish were monitored for at least two
27 weeks, and 80 percent of those stayed at the site that we tagged
28 them on and exhibited survival data for at least a month, and this
29 is just that data broken down a little bit more, so you can kind
30 of see the spread of how long fish were staying at the sites that
31 we tagged them at, and so I didn't mention it in the initial map,
32 but these are natural hardbottom sites on the West Florida Shelf,
33 and a couple of artificial reefs were included in those too, and
34 so these are just kind of typical gag habitats, and they are
35 staying put for relatively extended periods, at an individual
36 level.

37
38 This is one of those abacus plots that Sue mentioned before, and
39 I just show it to annoy people, actually, but it's a really great
40 picture. If you look at the bottom, it's three years -- It's
41 basically four years of data, and those shaded areas each
42 represents a year in time, and so this is gag daily presence at
43 sites, and the gag grouper ID is along that left Y-axis, and the
44 site that they're at is along the Y, but that's not really
45 important here, and the most important thing that I want you to
46 take home from this is just looking at that consistent presence
47 that a lot of these fish have at these sites through time, and so
48 some of these fish are present for over a year at the site that we

1 tagged them on. Other fish stay put for a couple of months, and
2 then they move around a little bit more.

3
4 The Xs that you see indicate recapture or harvest events, and the
5 green Xs are fish that were caught and put back in, and the red Xs
6 are fish that were caught and harvested and reported, and I just
7 kind of thing that this is fascinating, because you can see, number
8 one, that a lot of our fish are recaptured through time, and,
9 number two, that a lot of the fish are recaptured at the sites
10 that they were tagged on, but some of them aren't.

11
12 Those guys are caught in other areas and reported to us from the
13 anglers, and we can get some kind of more long-distance movement
14 on some of these individuals that are recaptured after a really
15 long period, and so the other great thing about this is -- Again,
16 at this point in time, this was almost ten years ago, but we were
17 really happy to get these recaptures over a year or two years,
18 because it demonstrates that these tags, that these acoustic tags,
19 which were attached externally, and not surgically implanted,
20 because we wanted to mimic catch-and-release in the field as
21 closely as possible, and it just demonstrates how long the tags
22 are staying in, which is a nice confidence booster.

23
24 Like I mentioned, we did have twenty-two recaptures, and fifteen
25 of those were by private anglers and not related to us or our
26 fishing adventures, and the rest of them were recaptured by us,
27 and some of those fish were captured multiple times.

28
29 Most recaptures occurred at the site that the fish were tagged at,
30 but a couple of them were at sites that were up to 116 kilometers
31 away from the initial tagging site, which, again, is really no
32 surprise for a fish that we know moves around. I think, talking
33 to some of the anglers that participated in this project, one of
34 the things that they were most interested in is the fact that they
35 did stay put for as long as they did at some of these reef
36 locations, and, again, their time at-large between recapture
37 events was anywhere from zero to 794 days.

38
39 Just to kind of show a picture of some of these examples of long-
40 distance movement, the directionality of the fish over time, you
41 can see where some of these recapture reports occurred. One of
42 the fish was recaptured over a year after we tagged it, 116
43 kilometers away, and that fish was actually caught by a commercial
44 longliner and called in.

45
46 There is generally -- Like the two that did move far away moved
47 west and deep, and another one of the individuals moved a little
48 bit south and out deeper, and then you can also get -- The great

1 thing about having these acoustic arrays in place is that you get
2 what I call the gravy data. You know, you're trying to answer one
3 question, but you actually get some really nice icing information
4 from fish that move around and are detected on other receivers
5 within your acoustic array, and so all of that information is
6 available.

7
8 Looking at how fish behaved after catch-and-release, I always give
9 this slide with a disclaimer, and the first one is that all of the
10 venting is being performed by experienced anglers, right, and so
11 these are guys that fish for gag all the time, and so they know
12 how to vent. We weren't working with, you know, first-time weekend
13 anglers catching gag, but first-time weekend anglers aren't
14 catching gag that often anyway, right, and most of the people that
15 are targeting these legal-sized fish are more experienced
16 fishermen, and so know that all the fish were vented by people
17 that knew what they were doing already.

18
19 Also note that the no-action group was not intentional in the
20 deeper waters. The mid-depth and the deep fish that I have a no-
21 action bar for is simply because that fish fell off of the
22 descending gear on its release, and so I didn't do that on purpose,
23 but you can still see we have data from the fish that were released
24 with no action in those mid-depth and deep zones.

25
26 The take-home point here is really not that earth shattering. The
27 take-home point is that, if fish require barotrauma mitigation of
28 some sort, if they're experiencing signs of barotrauma, some sort
29 of action is better than not doing anything at all, but, whether
30 you descend or whether you vent, as long as you do it properly and
31 you do it quickly, it looks like both of these mitigation behaviors
32 don't have a real big difference between the two of them, right,
33 and so just taking some action on fish is, obviously, a good
34 recommendation, which everybody already knows, because we're
35 recommending that to anglers currently, as we move forward.

36
37 The other thing that I just kind of wanted to share with you guys
38 is some of this data that we get from acoustic telemetry on these
39 individuals immediately after we let them go, right, and so we
40 have, again, a data point in the water column for these fish, every
41 minute to minute-and-a-half, for as long as those fish are being
42 detected at that site.

43
44 Almost universally, most of the fish -- What that crazy mess is on
45 the right is a bunch of individual gag, and the Y-axis is going to
46 be your depth. The X-axis is the first twenty-four hours of time,
47 right, and so you can just basically see, if you're picturing a
48 fish in the water column, what that fish does, and it's kind of

1 all over the place, depending on the individual, the site, and the
2 depth that the fish was tagged at, but there's this pattern of
3 little to no movement during the first few hours, which, again, is
4 probably to be expected, but only six out of those ninety fish we
5 tagged indicated that they didn't move at all after two days, and
6 so that was a 6.3 percent that we estimated to be due to mortality
7 after catch-and-release.

8
9 Again, this was a very finite three-year study, with recreational
10 anglers inside of forty-meters on the West Florida Shelf, but we
11 basically feel confident in the estimates that, when barotrauma
12 mitigation is happening, and is being done by a practiced angler,
13 the acute mortality of the fish after that catch-and-release event
14 is less than 10 percent. Recaptures definitely support that our
15 tags are being retained, and also some of the acoustic data that
16 we have for the individuals.

17
18 We do have very strong site fidelity at this reef locations, for
19 periods of weeks to months, of these fish, ranging in size, again,
20 from seventeen to thirty-two inches, and so these aren't the really
21 big, mature individuals that we were talking about when Sue was
22 giving her presentation on what's going on out on the edge, and
23 these are the smaller individuals, but, inside of forty meters,
24 both of the release methods that we tested seemed to be effective
25 for gag, and I kind of have that "see next slide" in there because
26 a lot of work has been done in the past five to eight years about
27 increasing angler knowledge and looking at behavior change through
28 time.

29
30 That graph on the right is from Charlie Robertson at Gulf States
31 and that report they did basically surveying recreational anglers
32 and looking at their knowledge on barotrauma mitigation
33 techniques.

34
35 My take-home from this is, number one, obviously a lot of anglers
36 know more about venting than they do about fish descending devices,
37 but I was amazed that so many anglers still don't know about
38 venting. I mean, if you look at that in Florida, only 60 percent
39 of anglers that they surveyed knew about venting, and so I think
40 there's a lot of room for improvement there and educating our
41 anglers about different barotrauma mitigation techniques. Return
42 'Em Right is, obviously, doing a really good job with that right
43 now.

44
45 That's just a really short snippet of that work that you guys had
46 asked to see a presentation about, and I'm happy to take questions,
47 if anybody has any.

48

1 **VICE CHAIRMAN BARBIERI:** Thank you so much, Angela. Excellent
2 presentation, and nice and quick as well, and so let me see if we
3 have any questions from the committee for Angela.

4
5 **DR. ISAACS:** I really liked listening to this, and it was one of
6 those rare instances where there was a confluence between what I
7 was doing at my job at Wildlife and Fisheries in Louisiana and
8 some of the preparations that I was doing for this meeting here.

9
10 Last week, my esteemed colleague, Mr. Adriance, was leading a
11 public comment group about seatrout, and some of the folks there
12 expressed a lot of skepticism about the studies show a relatively
13 high survival rate of fish that were released into the wild, and,
14 of course, I tended to think that some of that skepticism may have
15 been some self-serving rationalization, but I can only say that -
16 - I'm speculating on that matter, and I don't really know, and so
17 I see that you did this study in response to stakeholder interest,
18 and how did your stakeholders respond, so far, to what you've shown
19 them with this research, if they have?

20
21 **DR. COLLINS:** Well, I mean, yes, definitely they -- I think
22 involving them in the process, and having them be the ones that
23 actually drive how the data are collected is a really phenomenal
24 way to get buy-in on some of the results, right, and so I have not
25 heard -- They might not be talking to me because they don't want
26 to hurt my feelings, but I haven't heard anything crazy negative
27 on that at all.

28
29 I mean, obviously, what I have presented isn't anything ground-
30 breaking, or necessarily new, and I think what this does is support
31 that behaviors that are happening on the boat are resulting in
32 this sort of behavior in the fish. Afterward, a lot of the anglers,
33 I think, were like, yes, I can see that that is the results that
34 you found, and, you know, obviously, there's nothing really damning
35 in the results here, and what we're showing is that the catch-and-
36 release mortality inside forty meters is relatively low,
37 especially if barotrauma mitigation takes place.

38
39 I think anglers are happy to hear that the catch-and-release
40 mortality is relatively low inside forty meters, if barotrauma
41 mitigation takes place, and so the feedback, I think, for most of
42 these folks is, you know, thanks for listening to our request,
43 thank you to NOAA for reading that proposal and funding it, and
44 then thank you for allowing us to participate in the data-
45 collection process, and so I haven't gotten any negative feedback
46 so far on this particular one, or any of the cooperative research
47 work we've done with a lot of these guys and girls.

1 **VICE CHAIRMAN BARBIERI:** Thank you for that, Angela. I have Trevor
2 first and then Dave Griffith.

3
4 **DR. MONCRIEF:** I enjoyed this presentation for sure, and I have
5 two questions. The first one is you've got the mortality
6 essentially at less than 10 percent, from what you all observed,
7 and can you speak to maybe the handling time, the tagging process,
8 and if you think that might have added any additional mortality,
9 even though it was already low as it was?

10
11 **DR. COLLINS:** Yes, absolutely, and, I mean, our goal here was to
12 minimize handling time as much as we could and to mimic the
13 recreational activity as closely as possible, which is the reason
14 that I was like, okay, we're going to externally attach these
15 really expensive tags, right, because we didn't want to do surgery
16 and add that additional handling time into the equation, and so
17 fish were handled relatively quickly.

18
19 The external tags were basically a giant dart tag, and so that
20 added, you know, fifteen more seconds, maybe, and I think that,
21 honestly, because we were using seasoned anglers, and those were
22 the folks that were handling the fish, it happened in a relatively
23 quick situation, and so I really don't think the handling time
24 increased in any significant way. Did that answer your question?

25
26 **MR. MONCRIEF:** Absolutely, yes, and then the other side is, you
27 know, I wouldn't be too surprised on, you know, the percentage of
28 folks that, you know, know about venting. The descending device
29 thing is a new one, but, if you look at the figures from before,
30 for gag at least, where, if you look at the proportion of harvest,
31 or effort, that occurs in given areas, a lot of anglers actually
32 don't even encounter a species that has signs of barotrauma.
33 Therefore, that doesn't even cross their mind that it's one of
34 those things that they need to even have there, and so, if the
35 majority of fishing effort is occurring in shallow waters, most
36 anglers aren't even going to really see that effect.

37
38 **DR. COLLINS:** Right. Well, and, with gag, I mean, you definitely
39 start seeing impacts after you get outside of like sixty feet, and
40 you start seeing more barotrauma, and then, as you get into the
41 deeper water, with any of the reef fish species, obviously, you're
42 going to see more and more impacts, but taking action when you
43 don't need to -- I mean, why, right?

44
45 The one thing I will say though about descending is that, if you
46 have a shark issue, or a predation issue, descending the fish in
47 an area, even if the fish doesn't necessarily show signs of
48 barotrauma, but descending that fish, to get them past the

1 potential predation on the way back down, is a potentially useful
2 tool as well, and so descending and not venting, but, if the fish
3 don't require any action, you definitely don't need to poke them,
4 if they look like they can get back down on their own, but
5 sometimes, if you're in deep water, and you think that some action
6 -- You don't want to throw them back in and then have them float,
7 you know, and so, when in doubt, do something.

8
9 **VICE CHAIRMAN BARBIERI:** Yes, and thank you, Angela. I have Dave
10 Griffith.

11
12 **DR. GRIFFITH:** Thank you, Mr. Chair. You kind of started to answer
13 this question, but what do you define as quickly in getting them
14 back? Is that under a minute, or two minutes, or --

15
16 **DR. COLLINS:** Yes, and, I mean, have you ever been on a boat with
17 gag fishermen? I mean, it happens pretty quickly. You know, they
18 don't want to keep them on the boat and hang out with them for
19 very long, if they have to throw them back anyway, and so just
20 getting them off that hook and getting them back in the water, and
21 it's fast.

22
23 **MR. RINDONE:** They also have an uncanny ability to find your foot.

24
25 **VICE CHAIRMAN BARBIERI:** We will go to Harry Blanchet and then Jim
26 Tolan.

27
28 **MR. BLANCHET:** Thank you, Mr. Chair. One of the slides you had
29 was showing -- I couldn't find in my -- I don't know what number
30 it was, but it showed the amount of time where you had returns on
31 the fish, and you had like the first two days, the first two weeks,
32 and then longer time periods.

33
34 **DR. COLLINS:** Yes, the proportion -- Did you want that one or --

35
36 **MR. BLANCHET:** That one, yes. What struck me about it is, really,
37 it looks like your first forty-eight hours tells you everything,
38 because the difference between the after forty-eight hours -- Your
39 first two weeks and second two weeks, you're not seeing any --
40 You're not seeing an increase in the daily mortality rate in the
41 first two weeks over the second two weeks. It's actually lower,
42 but I'm assuming that that is because of the -- Because of the low
43 sample size.

44
45 **DR. COLLINS:** Well, yes, and, I mean, this is only ninety fish,
46 and this is where I have to say like this is the beauty of those
47 longer-term, longer-funded projects, right, and we never really
48 totally took apart these data, and so those are all size classes

1 of fish, over all months of the year, over three years, and that's
2 the proportion of tagged gag that we monitored over time, right,
3 and so those little monitoring periods along the X-axis are all of
4 our fish over the entire study time combined, and so I think what
5 we might see, again with a larger N, and if we really like teased
6 apart some of these data, is we might see some differences in the
7 proportion of time they're monitored, based on when we tagged them,
8 right, what time of the year that was, and also maybe the size
9 class of fish that has that tag on it.

10

11 You know, some of the little ones might be staying put or might be
12 moving around more than some of the bigger ones, and we might also
13 see some differences based on habitat and depth, and so we didn't
14 split all that up. We easily could, but we haven't, for the sake
15 of this presentation and for time, but just kind of have that in
16 the back of your mind, that these data are all those fish, over
17 all three years, and they're a bunch of size classes grouped
18 together and then, again, time of tagging probably has an impact
19 on how they move around, potentially. Does that make sense?

20

21 **MR. BLANCHET:** I agree, and I would just say that, based on this,
22 you haven't yet shown anything outside of the first two days as
23 being a high-mortality period, and what you would need is either,
24 A, more data collection or, B, more analysis of the data that you
25 have.

26

27 **DR. COLLINS:** I see what you're saying. Yes, and, I mean, we
28 really looking at just behavior. The whole point was just to look
29 at that first like immediate acute mortality after catch-and-
30 release, and that was the initiative for this particular project,
31 but, yes, I totally see what you're saying. Absolutely.

32

33 **MR. BLANCHET:** Yes, and I'm never one to say we should have less
34 data.

35

36 **DR. COLLINS:** Me either.

37

38 **MR. BLANCHET:** I think that this is a good teaser if you want to
39 look at anything beyond those first two days, and definitely it
40 was a very good demonstration. Thank you for your talk.

41

42 **DR. COLLINS:** Thank you.

43

44 **VICE CHAIRMAN BARBIERI:** Thank you for that, Harry. I have Jim
45 Tolan and then Dave Chagaris.

46

47 **DR. TOLAN:** Thank you, Mr. Chairman, and thank you for a very
48 informative presentation. It kind of struck me that you had the

1 tags externally and they stayed on as long as they did. That's
2 amazing.

3

4 **DR. COLLINS:** I know, right?

5

6 **DR. TOLAN:** That must have been a giant dart that went in there,
7 but, no, the question I had had to do with -- You plotted
8 temperature on one of the graphs, and was there a marked difference
9 between barotrauma in the wintertime versus the summertime,
10 because I'm used to seeing that a lot with red snapper off Texas,
11 and it's very different.

12

13 **DR. COLLINS:** It's always worse in the summer.

14

15 **DR. TOLAN:** Okay.

16

17 **DR. COLLINS:** Absolutely, yes, and that's like the critical time
18 to get those fish back in the water as fast as you can too, because
19 it's hotter at the surface, and the barotrauma just gets worse
20 with the higher temperature. The tags, the external darts that we
21 used to put those tags in, were really large, but the same thing,
22 and we were just like, if they stay in for a month, we'll be happy,
23 but they stayed in for a good, long, extended periods of time,
24 which we were happy about.

25

26 **VICE CHAIRMAN BARBIERI:** Dave Chagaris and then Josh.

27

28 **DR. CHAGARIS:** Thank you, and so I had a similar question related
29 to Jim and the temperature effect. I mean, this is something that
30 we know happens with stone crabs, and we've seen it with seatrout,
31 and so a higher discard mortality in warmer water, but I'm a little
32 bit confused, because I don't know like how that affects the
33 barotrauma, which is pressure driven, or is it just the stress of
34 being brought up on the surface?

35

36 **DR. COLLINS:** I think gas expansion is both pressure and
37 temperature driven.

38

39 **DR. CHAGARIS:** All right, and so, I mean, I think where this
40 matters is, you know, if we aren't incorporating temperature
41 effects on release mortality in our models, in our management
42 options, you know, we could be missing out on things, and so, you
43 know, if all of the effort is happening in the summer, when
44 temperatures are warm, the discard mortality is going to be higher.
45 If we're thinking about moving effort around, you know, these types
46 of -- This information becomes really important and valuable to
47 get it right, and so I'm wondering -- You know, are there more
48 data in here that kind of, you know, we could maybe understand

1 more of that temperature effect with these data or --

2
3 **DR. COLLINS:** I would love to give these data to you, Dave, but,
4 yes, the data are all available, and, anyone who wants to play
5 with them, you're more than welcome to at any time, but, to answer
6 that question, we only had a really small percentage of fish that
7 even displayed the mortality at all, right, and so then taking
8 that sample size and trying to split it by like month and
9 temperature, and it would just be -- You know, the statistical
10 power would be much smaller, but I do think that that's a very
11 good point, and it also just goes against when we're educating
12 anglers on best practices, especially in the summertime, and just
13 getting those fish back in the water.

14
15 You have to let it go as quickly as possible, and doing some --
16 Because, a lot of times, you know, you get a fish up, and I think
17 any of the anglers in here will support me on this, and they might
18 not show signs of barotrauma immediately, but, the longer you have
19 it on the deck, the worse it might seem to get, and so, in the
20 summer, it does seem to happen faster. Getting them back in the
21 water as quickly as possible, and having that message out there is
22 important, but teasing apart the data and how the fish behave in
23 the summer, versus how they behave in the winter, I think would be
24 a really interesting way to play with the data as well.

25
26 **DR. CHAGARIS:** Thanks.

27
28 **VICE CHAIRMAN BARBIERI:** Yes, and thank you for that, Angela. Josh
29 Kilborn.

30
31 **DR. KILBORN:** Thank you, and so I think I already know the answer
32 to this question, but I want to ask it anyways. Since you were
33 sampling in less than forty meters depth, presumably these are all
34 females.

35
36 **DR. COLLINS:** Presumably. You saw that talk.

37
38 **DR. KILBORN:** Right, yes, and so do you think there could
39 potentially be a sex effect?

40
41 **DR. COLLINS:** On barotrauma?

42
43 **DR. KILBORN:** Yes. I know you didn't measure that, and you don't
44 have any data to support it, but I'm just curious, and do you think
45 that could be a thing?

46
47 **DR. COLLINS:** Maybe, but I would think that, if anything, females
48 would have it worse than males would, based on what I've seen with

1 other species that are easily identifiable, and I'm just rambling,
2 and that has no basis in fact or science or data, that statement
3 that I just made, and so let the record show that.

4
5 I think that -- I don't think so. Most of these fish showed no
6 evidence at all of being reproductively active, externally, again,
7 we weren't catching them or doing anything like that, but I don't
8 suspect that sex plays a major role in the severity of the
9 barotrauma, just based on like the anatomy of the fish.

10
11 **DR. KILBORN:** Thank you.

12
13 **VICE CHAIRMAN BARBIERI:** Yes, thank you for that, and that was a
14 great presentation, Angela. It's time for us to move forward with
15 our presentations today, and our next talk is by our very own Dr.
16 Dave Chagaris. Are you going to speak from there or be official
17 and go to the podium? Dave's presentation is Age-Specific
18 Mortality of Gag from Red Tide on the West Florida Shelf. Take it
19 away, Dave.

20
21 **AGE-SPECIFIC MORTALITY OF GAG FROM RED TIDE ON THE WEST FLORIDA**
22 **SHELF**

23
24 **DR. CHAGARIS:** All right. Good morning, everybody, and thanks for
25 the opportunity to give you an update on some of the red tide work
26 in the ecosystem modeling. I have a fairly brief presentation,
27 and I'm just going to update, you know, what's happened with red
28 tide and mortality on gag grouper since you guys last saw this in
29 2021, and then I'll talk about, you know, some of the future work
30 we plan to do with the model.

31
32 The last time you guys saw this was in November of 2021, the SSC
33 meeting where we met to set the ACL for gag, and I had updated the
34 -- I had updated the red tide mortality index through October of
35 2021, and so what happened after that, and, well, basically 2021
36 was the Piney Point nutrient dump that basically fed that red tide
37 bloom around Tampa Bay.

38
39 That red tide basically ended in October, and there was no
40 additional red tide mortality to add for that year, and so we were
41 pretty good with the value that we had in November, and there was
42 no additional mortality for 2021.

43
44 In 2022, a bloom formed off of Lee County, after Hurricane Ian,
45 and so there was a lot of inland flooding that washed out, and
46 this bloom formed right around October. It got pretty severe in
47 November, and it sort of dissipated, but then it lingered around
48 through February and March of 2023, but it was mostly restricted

1 to the nearshore waters of southwest Florida, and you can see these
2 are some of the maps that I've developed, and these are the types
3 of maps that are input into the ecosystem model, although these
4 are at a finer resolution than what the ecosystem model runs, but
5 the good news is that, since March of this year, there really
6 hasn't been any red tide in Florida, and so it's been a very quiet
7 year, and so that's a great thing.

8
9 I only had -- The analysis that I will show in the next slide only
10 had data through June of this year, but the three maps there on
11 the bottom show July, August, and current through September, and
12 those are the water quality samples from FWC, and you can see there
13 is no red tide for those months.

14
15 I updated the West Florida Shelf ecosystem model with those data
16 through June of 2023, to try to get a handle on what that red tide
17 mortality looked like last year, as well as what it's showing so
18 far this year, and, as I mentioned before, there was no additional
19 red tide mortality for 2021 that occurred after that presentation
20 at the November SSC meeting.

21
22 The red tide mortality was estimated to be higher in 2022 than
23 2021, but that's only for ages-zero, one, and two-year-olds, and
24 so, in those first three rows, you can see there's an uptick in
25 mortality, or, the first row for those three ages, you can see
26 there's an uptick in mortality in 2022 compared to 2021, albeit,
27 you know, fairly small, but it actually declined for those older
28 ages, and so this is getting at the overlap, the nearshore bloom
29 in 2022 that didn't really overlap with the older ages as much,
30 but it still resulted in an overall increase, and so we also
31 summarized this as the total biomass lost across all ages, and it
32 resulted in basically 2022 was about equal to 2021, as far as red
33 tide mortality goes, and there is basically no red tide mortality
34 so far for 2023, and so it will be interesting to see how the
35 juvenile indices look.

36
37 That basically wraps up the update, but I wanted, just while I
38 have the floor, to talk a little bit about what we continue to
39 work on and what we're going to be working on over the next few
40 years, and so, after we -- We continue to try to improve how we
41 map red tide, and these are inputs that go into the model, and so
42 we started with several approaches.

43
44 We started with inverse distance weighting, which is the simplest,
45 and we've gone to, you know, ordinary kriging and isotopic kriging
46 and also some spatial delta generalized linear mix models, and,
47 basically, you know, we found that transitioning to either the
48 anisotropic kriging or the VAST models for extrapolation would

1 probably be preferable.

2

3 When we compared the predicted red tide events to the actual data,
4 it captured the distribution a little bit better, and so, as we
5 move forward with this model, we're probably going to be developing
6 some new approaches to develop those maps, the input into the
7 ecosystem model, and there's also been a lot of effort -- This is
8 more of work that is ongoing for the ecosystem modeling community
9 as a whole, really trying to develop more systematic approaches to
10 assessing model performance, and so we've already kind of developed
11 this ability to parallel process Ecospace runs, and so now we can
12 do several thousand runs in a day, and kind of cover the full
13 parameter space, but now we're moving towards actually being able
14 to try to calibrate these models to actual data.

15

16 I was at -- I attended remotely the National Ecosystem Modeling
17 Workshop, and there was a presentation given by some folks that I
18 worked with over in Spain that do a lot of ecosystem modeling, and
19 they developed a package that basically allows you to marry the
20 predictions with the actual data, and so, from that, we can, you
21 know, eventually start to develop sort of an objective function
22 that we can statistically evaluate model fit and then combine that
23 with parallel processing. The goal here is to just get more
24 reliable models.

25

26 Now for some future work, and I'm happy to say that we received
27 some more funding from the NOAA RESTORE program to continue to
28 refine this model, and, with this additional funding, we're hoping
29 to kind of resolve a couple of big uncertainties that were
30 remaining from the previous project, and so there's four objectives
31 to this, and I will describe each one in just a little bit of
32 detail, but we have a remote sensing component that is led by
33 Chuanmin Hu at USF, and we have biogeochemical modeling out of
34 Florida State, and those are going to be integrated into the West
35 Florida Shelf ecosystem model, to basically improve how we model
36 the lower trophic level dynamics and represent red tide, as well
37 as dissolved oxygen, but also then to do this operational
38 management application, through a series of SEDAR stock
39 assessments that will take place over the next five years.

40

41 All right, and so the first objective is to develop some new red
42 tide maps, using the NOAA VIIRS satellite. The MODIS Aqua
43 satellite that we've used to previously map red tides is basically
44 planned to be stopped sometime this year, and so we need to
45 transition to this new satellite, to be able to have some
46 continuity in this model.

47

48 Chuanmin is the expert on this, and he's going to work to develop

1 a red tide product, using VIIRS and some deep-learning models,
2 and, from that, we'll have maps of bloom frequency, footprint, and
3 intensity at biweekly, monthly, seasonal, and annual intervals
4 that can be used in the ecosystem model, but they'll also be
5 publicly available for other research and ecosystem assessments.

6
7 The other component, Objective 2, is to incorporate oxygen and
8 *Karenia brevis* dynamics into a physical biogeochemical model, and
9 this is led by Mike Stukel, who developed, with previous RESTORE
10 funding, a biogeochemical model for the Gulf of Mexico plankton
11 food web.

12
13 This was originally developed and applied to look at Atlantic
14 bluefin tuna larvae, but it's also been used to look at Gulf of
15 Mexico nutrient dynamics, and it essentially simulates three-
16 dimensional time-varying dissolved oxygen, pH, phytoplankton, and
17 zooplankton biomass, and so that will all be used to sort of drive
18 the West Florida Shelf ecosystem model, also incorporating the
19 potential hypoxia events that occur associated with red tide, or
20 just associated with algal blooms in general, and this will allow
21 for this one-way coupling of the biogeochemical model to the West
22 Florida Shelf model.

23
24 Another advantage this has is that, if we wanted to look at short-
25 term projections, those biogeochemical models are better able to
26 integrate with like oceanographic projection models, and then, of
27 course, this will all be integrated into the West Florida Shelf
28 Ecospace model. We will do some wholesale updates and calibrations
29 of the model, and we'll start by sort of reassessing the age
30 structure for the assessed species. Some of the species that we're
31 planning to assess over the next few years don't currently have
32 age structure, and so we'll add it there, and we'll also modify
33 our lower-trophic-level groups to be able to match better with the
34 biogeochemical model.

35
36 Another thing that we want to really try to emphasize and improve
37 on in this approach is integrating more with the fisheries-
38 independent data, and so we're probably going to refine our base
39 map, and our habitat maps, so we can better integrate with the
40 GFISHER camera survey, and this is, you know, trying to bring the
41 model to the data, and also bring the data to the model, and I
42 think that will allow us to parameterize the model better, but
43 also do the validation much better.

44
45 I mentioned the model calibration, and that can lead to some
46 ensemble modeling, which is essentially what we've done with the
47 red tide, where we have, you know, sort of a confidence set of
48 model runs, and we use that to generate our uncertainty values,

1 and I think that could be expanded as we expand that parameter
2 space, and give a more systematic valuation of the models, and
3 then there's potential to develop these MICE models, which we've
4 used in other settings, and these are models of intermediate
5 complexity, and so maybe we don't need to have all the species in
6 the model. If we're just concerned about gag grouper, we can
7 simplify it and pill out some of those species that aren't really
8 related and have a model that's more nimble that could be used for
9 management.

10

11 Then the operational aspect, operationalizing the model, this is
12 really kind of a procedural thing, and this is where we want to
13 kind of establish these protocols and procedures in an input-
14 output format, so that we can do routine updates and have
15 reproducible model runs, and we've worked, you know, through most
16 of this kind of workflow automation with the previous project, and
17 so now it's really a matter of kind of tying it up, developing the
18 code library, and maybe some frontend rShiny applications that can
19 allow us to do this more seamlessly.

20

21 Eventually, the goal is we can hand this off, and it can be updated
22 and run on a regular basis, and this will be refined and improved
23 as we apply it to each stock assessment, and so we sort of get to
24 see how well we do at the first go, and hopefully, by the end of
25 the project, we have all the wrinkles ironed out.

26

27 We have a small stakeholder engagement component on this project,
28 and this is really just to have some eyes and ears on the water,
29 so that, when red tides are occurring, we're gathering this local
30 ecological knowledge as they're seeing it. We've seen how
31 important this information can be, but, if we have to go back and
32 collect it five or ten years after the event occurs, there is a
33 potential for recency bias, and so we just want to have some eyes
34 and ears on the water.

35

36 I'm working with Mike Sipos, and I've worked with him on previous
37 projects, and he's the Collier County Sea Grant agent, and he's
38 very well connected to the fishing community down there, and we
39 also have Casey Streeter involved, as well as Dylan Hubbard, and
40 so they're going to help connect us to some anglers in the region,
41 to help get some information.

42

43 Then we plan to do some in-person meetings, and maybe even do some
44 radio shows with Dylan, which I think would be a lot of fun, to
45 just kind of get the information out there and help promote the
46 science and get feedback from them.

47

48 The timeline for all this, this project actually starts next week,

1 officially, and so we'll hit the ground running. Because we have
2 these three different components, they're going to sort of be
3 phased in at different times over the course of the project. Our
4 goal is to basically, for the red grouper assessment, which is
5 scheduled to be starting next year, we would like to have at least
6 a prototype of the VIIRS satellite data into the West Florida Shelf
7 Ecospace model at that point. Then, you know, by 2026, we hope to
8 be fully operational with the biogeochemical model integrated into
9 the ecosystem model.

10
11 You know, hopefully those timelines can be moved up, and, as we
12 get started, we can see progress, but I'm happy to come back and
13 provide updates, you know, routinely, or as needed, but this will
14 basically be the next five years of my life, and I think you'll be
15 seeing a lot more of this, and so I just wanted to give you guys
16 a heads-up that this work is ongoing, or will be ongoing, and, you
17 know, we're happy to take input and provide feedback along the
18 way, and so I'm happy to take any questions.

19
20 **VICE CHAIRMAN BARBIERI:** Thank you so much for that great
21 presentation, Dave, and, yes, it's great to hear that you're
22 willing to come back periodically and give us these updates on the
23 progress of this project, because it ties, as you showed -- It
24 ties into so many other initiatives and all the processes that are
25 taking place, and knowing how this progresses is important. With
26 that, let me see if you have any questions from the room. Jim
27 Tolan.

28
29 **DR. TOLAN:** Thank you, Mr. Chairman, and thanks, Dave, for the
30 update on all the work that you're doing. I have a comment, and
31 it has nothing to do with gag, but it has to do with red tide. In
32 the last two weeks, we've been sort of following this slug of red
33 tide that's along the Texas coast and making its way down from
34 Galveston, with moderate fish kills, and nothing too dramatic, but
35 the odd part about it is there's been a number of sharks washed
36 up, and it typically doesn't affect elasmobranchs, and so any
37 insight on that?

38
39 **DR. CHAGARIS:** Well, I don't know that it doesn't affect
40 elasmobranchs. I mean, we've heard, you know, there was whale
41 sharks that washed up on beaches in previous red tides, and we've
42 heard -- We've seen reports of like sharks moving and aggregating,
43 you know, in response to red tide. You know, I don't know enough
44 about the physiology of elasmobranchs and why they might be more
45 or less resistant to red tide, but I'm not surprised, based on
46 some of the things we've seen with red tides here. That doesn't
47 shock me too much.

1 **VICE CHAIRMAN BARBIERI:** Thank you for that, Dave. Any other
2 questions or comments for Dave? If not, thank you, Dave. We
3 really appreciate the update, and I look forward to hearing the
4 next update, whenever that is ready. With that, we will get ready
5 to move on to our last overview presentation for this morning, and
6 I would like to invite Bev Sauls to come to the podium and give us
7 a presentation on the discard mortality of gag on the West Florida
8 Shelf, and thank you, Bev, for putting together the presentation
9 and joining us.

10
11 **DISCARD MORTALITY ON THE WEST FLORIDA SHELF**
12

13 **MS. SAULS:** Sure. Thank you for the invite. Okay, and so I work
14 with Luiz, and I head up our fisheries-dependent monitoring group,
15 and so I'm going to talk about some of the ways that our monitoring
16 programs are contributing to some of the issues and questions we
17 have about discards and how the fishery operates and how that
18 impacts discard mortality, and it ties into a lot of the talks
19 that we've already heard this morning. With that, I will move
20 ahead.

21
22 I am going to talk about two of our surveys that we conduct in
23 Florida. They're state-funded surveys, and one is the State Reef
24 Fish Survey that focuses on private boat fishing effort and catch,
25 particularly for reef fish, and it was implemented in the Gulf in
26 2015, and we also collect information, as part of that survey, on
27 things like artificial reef use, the distribution of fishing
28 effort, and, more recently, we've added a question or two about
29 what types of methods people are using to release their fish.

30
31 The second survey that I'm going to talk about is our for-hire at-
32 sea observer program. This project was started in mid-2009, right
33 before the oil spill in the Gulf in 2010, and we put fishery
34 observers onboard charter boats and headboats, and they ride along
35 with the customers and collect data at-sea, real time, on what's
36 being caught and released, and we collect vital information on the
37 size composition of those discards, the types of methods being
38 used to catch, handle, and release those fish, and what condition
39 and fate those discards are in when they're released, or the fate
40 after they're released.

41
42 Real quick, I would like to acknowledge my colleague, Butch Ayala,
43 who was instrumental in implementing and developing this project
44 on the Gulf coast of Florida and getting it expanded over to the
45 Atlantic coast. We, unfortunately, lost Butch this year, but I
46 want to acknowledge his important contribution to all of this work.

47
48 What we do ties in critically to many of the things that you guys

1 use to guide and develop your management decisions. Monitoring
2 feeds into management, and it's being used to track the outcomes
3 of outreach and education efforts, and it's also an important data
4 input into stock assessments, and so, with regard to discarding,
5 you're probably familiar already that, in the Gulf of Mexico, in
6 the last year, there was a new requirement that recreational
7 anglers have onboard with them either a venting tool or a descender
8 device that's rigged and ready to use to help them release fish
9 that need assistance with barotrauma.

10
11 That rule is extended into Gulf state waters this year in Florida,
12 and, at the same time as those regulations, there's been a large-
13 scale outreach and education effort called the Return 'Em Right
14 program, and it's ongoing for multiple years. Last year was the
15 first year, and, in the first year, they reached out to over 11,000
16 offshore anglers and distributed free descender device gear and
17 education on how to use those gear and best practices for how to
18 catch and release fish.

19
20 Our monitoring programs, both the State Reef Fish Survey and the
21 at-sea observer program, are being used to help monitor the outcome
22 of that effort to try and quantify what the success of the program
23 was and what were the benefits to reducing discard mortality.

24
25 In the first year, the States of Florida, Alabama, and Mississippi
26 were all involved in the monitoring of this effort. In the first
27 year, in our State Reef Fish Survey, and the two other state
28 surveys of the other two states, about 41 percent of private boat
29 anglers who were intercepted and asked whether they had a descender
30 device onboard said that they did, and so there is some indication
31 there that people are becoming aware of this requirement, and maybe
32 some of the outreach is starting to take hold, and people are using
33 these. It wasn't very long ago that we would have never heard
34 about this happening.

35
36 The other part of that program is they have expanded for-hire
37 observer coverage to try and monitor the efforts on for-hire
38 vessels, and hopefully quantify the conservation benefits of using
39 those devices, and so they have supplemented our work on the Gulf
40 coast of Florida, and Mississippi and Alabama have recently adopted
41 our at-sea observer coverage methods, and so that program has been
42 extended to help monitor the Return 'Em Right program, but all of
43 that has great implications too for future data inputs for stock
44 assessments, because our at-sea observer program, in particular,
45 has been a very necessary and valuable source of information on
46 the size composition of discards.

47
48 We've provided a lot of information on how to characterize where,

1 when, and how people are fishing and catching and releasing fish
2 that wasn't known before, and we even have done now some studies
3 on the fate of those discards, which I will talk about later in
4 this talk.

5
6 First, I want to talk about kind of the characteristics of the
7 recreational fishery that we've learned through some of these
8 surveys, and so, on the Gulf coast of Florida, the anglers who are
9 targeting reef fishes can target them on artificial reefs or
10 anywhere on our natural hardbottom habitats, and, in this figure,
11 you will see that kind of cloud of black dots close to the shore,
12 to the shoreline, and those are artificial reefs that have been
13 deployed by the state, and kind of running through that cloud is
14 a dotted line, and that is the state-water boundary, and so, in
15 Florida, on the Gulf coast, state waters extend out to about ten
16 statute miles from shore, and so you can see that a lot of those
17 artificial reefs are clustered kind of close to that state boundary
18 line.

19
20 I also included on this figure two bathymetry lines, one for the
21 thirty-meter depth boundary and one farther offshore for fifty
22 meters, and what I want to point out, by including that, is that,
23 when you look at the west coast of Florida, along the peninsula,
24 anyone who is fishing from that kind of Big Bend area, which is
25 that hatched region in the armpit of Florida there, or from that
26 lower peninsula area, which is the darker gray, and anyone who is
27 fishing for reef fish from those areas has to travel pretty far
28 offshore to reach the deep depths, and that has implications for
29 discarding and discard mortality. If you look up in the Panhandle,
30 you can see that deepwater areas are much more accessible to
31 recreational fishers.

32
33 What are we learning about private boat reef fish effort from our
34 State Reef Fish Survey? Not surprisingly, I guess, is that a large
35 percentage of the fishing effort is occurring off that Florida
36 peninsula coast, which is much higher in human population, as well
37 as a longer fishing season, but you also see that there is lesser
38 effort in that Big Bend area, which is also an important area for
39 gag grouper.

40
41 The other thing we're seeing is that the majority of fishing effort
42 is occurring in state waters, and so, in the Panhandle, it's as
43 high as 76 percent of trips in the Big Bend. In the Peninsula,
44 it's more around 60 percent.

45
46 When we look at what types of habitats these trips are occurring
47 on, we have a question on there asking, for each trip reported,
48 whether the trip utilized an artificial reef, and, overall, about

1 46 percent of reef fish trips report utilizing an artificial reef,
2 but half of those occur in the Panhandle, and so, thinking about
3 gag grouper distribution being farther off that West Florida Shelf,
4 that shallow -- That shallow, sloping continental shelf that I
5 talked about in that earlier slide, and you can really see that
6 people in that area are less likely to be fishing on artificial
7 reef and are more likely, probably, to be targeting things like
8 gag grouper on natural bottom.

9

10 Over time, we know that fishing effort has been increasing, and
11 you can see that also in the catch rates. As fishing efforts
12 increase, and catch rates have increased, we've also increased our
13 harvest restrictions, and, essentially, what that impact has meant
14 is that the majority of the total catch that's being caught by
15 recreational fishing is comprised of discards, and you can see
16 that the red line and the blue line have gotten much closer in
17 more recent years, and so, in Florida, we're seeing upwards of
18 over 90 percent of the total catch is being discarded, and so what
19 that means is that even a small percentage of discard mortality
20 can have a large implication on what the total removals are through
21 recreational fishing.

22

23 Tying into what Sue talked about this morning, and did a great job
24 of talking about their life history, and I want to focus on how
25 that life history intersects with recreational fishing and effort
26 in Florida, and the key point here is that gag grouper are
27 vulnerable to fishing pressure pretty much throughout their life
28 history.

29

30 As soon as the juveniles recruit into those high-salinity seagrass
31 habitats in the eastern Gulf, they first become vulnerable to
32 recreational catch-and-release fishing, and I got a question about
33 that this morning, and so that is when they first encounter, you
34 know, the recreational fishery.

35

36 As they become sub-adults and females, they're associated with
37 those nearshore hardbottom natural habitats off of the west coast
38 of Florida, and that's also where a large portion of our
39 recreational fishery takes place, and so they're subject to not
40 just discarding, but also targeting for harvest, and then, as you
41 move farther offshore, where the males and spawning females are
42 found, that's when they become more vulnerable to commercial
43 targeting, and you will see, in this bottom figure, also some
44 recreational targeting, and so these are observations of harvested
45 fish in the for-hire fishery over -- From 2009 to 2022, and you
46 can see that fish are being caught both close to shore and further
47 offshore.

48

1 Just to give you a sense of some of the seasonal patterns that
2 we're seeing in these gag observations in the for-hire fishery,
3 these are the winter months, January, February, March, April, and
4 the yellow dots are observed gags that were released alive, and
5 red dots are fish that were either harvested or they were released
6 dead, and you can see that, in the winter months, there is quite
7 a bit of discarding close to shore, and not a lot of discarding in
8 the Panhandle, because, up there, fishing is much more seasonal,
9 but, by April, you do start to see things picking up in the
10 Panhandle as well.

11
12 When we move into summer, we see more frequent occurrences, and
13 June and July -- All those red dots are harvested fish, when the
14 season is open, but things kind of drop off in late summer, and
15 they become more sparse, and then they pick up again in the fall,
16 and that ties in well with what Sue talked about earlier this
17 morning, about how those -- There's that inshore migration of
18 females that come in and aggregate closer to shore before they go
19 offshore to spawn.

20
21 We see those same patterns in our private boat recreational fishery
22 as well, and so these are our State Reef Fish Survey landings on
23 the top, and discards on the bottom, and the dark-blue bars are
24 fish caught in the EEZ, and the brighter blue is the fish caught
25 in state waters, inside the state-water boundaries, and so you
26 will see that, for the harvested catch, which is much smaller, and
27 note the scale on these two figures, the harvested catch is much
28 smaller than the discards, but we see that seasonal pattern of
29 peaks in the summer and the fall, and same with the discards, but
30 you will notice that a large portion of the harvested catch is
31 coming from the EEZ, where a large portion of those discards are
32 actually coming from state waters, and so very shallow depths close
33 to shore.

34
35 When we look at those landings and discards by region, you can see
36 that, for the landings on the top, the bright blue in this figure
37 is the Big Bend area, and yellow is the western Peninsula, south
38 of the Big Bend, and you can see that a large portion of the
39 landings are coming from the Big Bend, which is interesting,
40 because effort is lower there, and so that's an indication that
41 the catch rates are pretty good, compared to farther south. You
42 can see that, for the discards, a much higher proportion of those
43 are coming from the western Peninsula, as well as the Big Bend.

44
45 Now that I've kind of given you an idea of how the fishery is
46 interacting with the life history, I'm going to talk now about a
47 study that we did in 2014, and this study was published in
48 *Fisheries Research*, and I provided it as a background document,

1 and so I will probably kind of gloss over the methods, and feel
2 free to check out that paper, and I will be happy to answer any
3 questions later, if you have them, but this is actually kind of a
4 unique study, because it's a fishery-dependent discard mortality
5 study, and it's not an experimental approach. We actually went
6 into the fishery and measured it in the fishery.

7
8 The objectives of this study were to rapidly assess the condition
9 of discards that we could directly observe in the for-hire
10 recreational fisheries, and so on charter boats and headboats with
11 our at-sea observers, and to model the survival of those gags that
12 were released in different conditions within the fishery and
13 estimate what portion of those discarded gags die under those true
14 conditions that are experienced in the hook-and-line fishery.

15
16 This was a cooperative study, but vessels that participated in it
17 -- We had over 160 for-hire vessels that cooperated during the
18 years of this study, and they voluntarily allow FWC biologists
19 onboard, to ride along with their customers, and those vessels
20 were selected randomly year-round to carry observers, and so the
21 study was done 2009 through 2012.

22
23 This is the study area. At the time, we had not expanded this
24 work farther south of Tampa Bay, and so the area for this work
25 includes kind of four main regions, that Panhandle region of the
26 northwest part of the state, the Big Bend, and then there's two
27 areas off of Tampa Bay, one I'm calling Tampa Bay nearshore, which
28 are kind of single-day fishing trips, and then we have a smaller
29 fleet of vessels in that area that offer multiday trips that go
30 farther offshore, and so I've kind of considered that a separate
31 region, just because of the type of fishing they were doing.

32
33 For the fish that we directly observe on those trips, discards
34 were marked with Hallprint plastic dart tags, and we use these
35 tags, one, because it's quick and easy to do, and so you get the
36 fish back overboard quickly, but the other reason though is that
37 it's inserted in the dorsal area, and so you're not accidentally
38 venting the fish involuntarily when you're tagging them.

39
40 These tags were printed with our FWC tag return hotline telephone
41 number and email address, and the big word "REWARD", and we offered
42 t-shirts, and I think that's Butch wearing one of our t-shirts
43 right there, and we offer t-shirts as a reward. They're pretty
44 popular shirts, and so we've had, you know, a pretty good success
45 rate with getting some returns on these.

46
47 This is just a list of some of the variables that we collect with
48 each of those fish, and so we know what depth they were captured

1 at, and the captains share that information with us on each fishing
2 station, and we get a size on the fish.

3
4 We record the location where it was hooked, whether it had gill
5 injuries, barotrauma symptoms, and whether the fish was vented or
6 released at the surface without venting, and what the behavior of
7 the fish was when it was released, whether it was vigorous and
8 immediately was able to resubmerge or if it was initially
9 disoriented before it could submerge or it was floating.

10
11 I will note that, during the study, we didn't have any observations
12 of descending device use on these vessels, and so that was not
13 part of this study, and that's an indication of just how things
14 are changing in the fishery, with some of the methodologies that
15 are being used in more recent years now.

16
17 We took all those factors, and that allowed us to group all of the
18 fish that were tagged and released as discards into three distinct
19 release condition categories. Those fish that were in the good
20 category were able to immediately submerge when they were released,
21 without the need or assistance from venting, and so the mates and
22 captains on the vessels decided when to vent the fish. If the
23 observers vented the fish, it was only at the instruction of the
24 mate or captain, and so fish -- The decision to vent was made by
25 the crew.

26
27 Those fish in good condition excluded any fish that we had observed
28 hook injuries or visible gill injury, and so this is kind of our
29 healthiest class of fish.

30
31 Fair condition fish were classified as those that either couldn't
32 immediately submerge or they were able to submerge, but had the
33 assistance of being vented prior to release, and we also excluded
34 any fish with hook injuries or gill injuries from that group, and
35 then our worst group was those fish that had any one of those
36 impairments listed below, floating at the surface, hook injuries
37 or gill injuries, regardless of whether they were vented or not.

38
39 We needed a robust tag recapture model, just because of the way
40 that these fish were tagged and entered into the study, and so
41 these fish were tagged year-round, over multiple years, over large
42 geographic areas, and tag recapture data is highly dependent on
43 fishing effort that varies regionally, and it can vary annually,
44 and, in fact, it did during this study. There was the oil spill,
45 and there was major changes in the harvest seasons during the
46 course of the study.

47
48 It can vary seasonally, and so, depending on what month of the

1 year a fish enters into the study, it might depend on how long it
2 takes before it has a probability of being recaptured, and so all
3 of those things had to be accounted for in this model, because our
4 true interest really is what is the relative recapture rates of
5 fish in those good, fair, and poor conditions, and we didn't want
6 it to be confounded by all these other factors.

7
8 If you kind of think of tagged fish, and just kind of follow me
9 for a minute, and if you kind of think of tagged fish as like
10 Easter eggs, and, if you're planting your Easter eggs before the
11 big hunt, and there is raccoons out there who like to eat eggs,
12 but they really like the red Easter eggs better than the other
13 ones, when you open up your season on Easter egg hunting, it's
14 going to be pretty hard to find red eggs, versus those less-testy
15 yellow or green eggs, and so it might take longer for you to find
16 those eggs, or you might never, ever find those eggs.

17
18 There is other issues too, where the green and yellow eggs, if
19 they're hidden really well, you might not find those either, and
20 so, when you think of tagged fish -- If you get a 10 or a 15
21 percent tag return rate, that's pretty good, and so, the rest of
22 those fish, you don't know what their fate was, and all you know
23 is that you tagged them and they were never seen again, but the
24 ones that you do get tag return information on can inform what the
25 relative survival rates are for those fish in good, fair, and poor
26 condition.

27
28 If it takes you longer to find those fish that were released in
29 poor condition, and you find less of them, then that's an
30 indication that their survival was lower, and that's kind of what
31 this model does. It includes fish that were entered into the study
32 at various time periods, and it considers not just whether they
33 were recaptured, but how long it took for them to be recaptured,
34 relative to other fish in less ideal condition groups, and, at the
35 same time, excluding all those kind of extra factors that you don't
36 hear about, like how long was the fishing season and what year did
37 the fish enter the study, and so you're accounting for all of that
38 in this model.

39
40 Essentially, what it's doing is it's calculating an instantaneous
41 mark-recapture rate, a probably of being recaptured, essentially,
42 over time, but for those three different groups of fish, those
43 released in good, fair, and poor condition, and the assumption is
44 that things like tag loss, non-reporting, and fish movement
45 wouldn't really have anything to do with what the condition was of
46 the fish when it was released. Those things would happen
47 regardless of which condition a fish is released in, but the one
48 thing that would matter could be mortality, and so, if you can

1 compare the rates, these instantaneous rates, of recapture across
2 those three groups, it should help inform you on what the relative
3 survivals are in relation to each other, and so I hope I'm
4 explaining that right.

5
6 I am going to go -- I am going to skip through some of these
7 slides, because I don't want to spend too much time on the action
8 model, and I think you all understand the concept there of
9 measuring relative survival, and I'm going to go into my results
10 now.

11
12 This is the numbers of trips that we had observers on in each of
13 those four regions, and so, in the Panhandle, we had over 218 trips
14 that we sampled, 256 in Tampa Bay, and thirty-seven of those
15 offshore trips are the multiday trips off of Tampa Bay, and then
16 only seven in the Big Bend, which is unfortunate, because that is
17 an important area for gag, but we just don't have as many headboats
18 and charter boats operating in that area, but the thing that sticks
19 out here -- We actually tagged almost 4,000 gags over the time of
20 this study, and what you will see is that the majority of those
21 fish were captured in that nearshore Tampa Bay area, and the
22 majority of those observed in that area were released in good
23 condition.

24
25 We saw differences in the mean capture depths for fish that were
26 discarded, and so in the Panhandle and that offshore Tampa Bay
27 area. Depths of discarding occurred at deeper depths, compared to
28 the Tampa Bay and Big Bend, which fits in with that bathymetry map
29 that I showed you earlier, that you have to go farther offshore
30 to reach deeper depths.

31
32 Then that lines up too with the impairments that we saw, and so
33 you'll see that, in this first category of no impairment, you can
34 see that, in those two nearshore areas, the Tampa Bay nearshore
35 and the Big Bend area, the majority of the fish that we observed
36 in that area did not need to be vented, and they swam away fine,
37 and then, when you move into the more impairment categories, vented
38 fish, fish that were observed in the Panhandle, and then those
39 offshore trips, tended to be vented more frequently, and they also
40 tended to have some of those more severe injuries.

41
42 For those gags that we observed released in good condition, they
43 tended to be smaller in size, and so this first column in these
44 two figures are the fish released in good condition, and the second
45 column is fair, and the third column is poor, and they also --
46 Those fish released in good condition tended to be caught in
47 shallower depths.

48

1 These were the variables that were entered into my proportional
2 hazards model, and this is the type of regression model that was
3 used to take into account both whether a fish was recaptured and
4 the time it was at large before it was recaptured, and so it's
5 measuring that instantaneous rate, and these were the results from
6 that proportional hazards model, and so it calculates this thing
7 called a hazards ratio, and, essentially, it's comparing one group
8 to another group and what is the hazard, or the probability, that
9 that fish in one group is caught relative to another group, and
10 so, in this first comparison, it's telling us that fish that were
11 released in fair condition, those fish that had to be vented before
12 they were released, were about 66 percent as likely to be
13 recaptured as fish released in that good condition group, and that
14 was a significant result.

15
16 Then the same with that poor condition category, and they were
17 about 50 percent as likely to be recaptured as fish in good
18 condition. We did not see a significant difference between the
19 fair and poor groups, and I will note that we had pretty small
20 sample sizes in those poor fish, and most of the fish were vented
21 and at least able to resubmerge.

22
23 We know how many fish at each depth, from the observer data, and
24 we have numbers of fish observed at each depth, and so I broke it
25 up into ten-meter categories, and we also know the relative
26 survival rates for those fish released in fair and poor condition,
27 relative to our good condition group, and those survival estimates
28 can be used to calculate total deaths for fish in those two groups.

29
30 For that good condition group, unfortunately, we don't have an
31 actual control group to reference those two, and so we didn't have
32 a good estimated for what portion of those fish survive, and we
33 assume it's low, but we know that it's probably more than zero,
34 right, because you discard a fish in thirty meters, and it swims
35 down, and you don't see whether it got taken by another fish, or
36 maybe there was some variable that we weren't able to measure,
37 that wasn't visible to us, and so you know that some of those fish
38 probably don't survive, and so what mortality rate do we apply to
39 those to get a measure of the total deaths in each of those
40 categories?

41
42 During SEDAR 33, we did a comprehensive literature review of
43 studies that were available at the time, and those studies -- It
44 was a lot of experimental studies and other type of caging studies,
45 and those studies indicated that fish released in shallow depths
46 suffer relatively low mortality, and so I assigned a point estimate
47 of seven-and-a-half percent to those fish and an upper and lower
48 range of zero to 15 percent mortality, and I used that to calculate

1 these total deaths, and that's a reasonable value, or a range, I
2 think, to assume for those fish, since they did have no impairments
3 and obviously were caught in shallower depths.

4
5 This is just what the numbers of fish observed looks like, versus
6 the estimated deaths of those fish that we observed, based on those
7 calculations, and so you can see that the majority of the fish
8 that we observed were caught in fairly shallow depths, up to twenty
9 meters, and then that tapers off as you go into deeper depths,
10 but, as you move into those deeper depths, a higher percentage of
11 those fish are observed to be in fair or poor condition, and so
12 you apply a higher mortality rate to those fish, and then that
13 gives you your kind of estimated deaths on the other side, and
14 this is how a discard mortality rate was calculated.

15
16 This is what the percent mortality looks like across those
17 different depth categories, and, if you calculate those deaths for
18 overall, for what we actually observed in the hook-and-line
19 fishery, gag discard mortality is about -- It's estimated to be
20 about 15 percent, and that falls right in that kind of -- On this
21 line, it falls right there at that twenty-one-to-thirty-meter
22 range, which is about where most of the fish are being released
23 from, and so that's good news, is it's at least not as high as --
24 I think the previous SEDAR had estimated as high as 40 percent
25 mortality, and so this was a pretty big reduction in that SEDAR on
26 what this data input was.

27
28 In conclusion, most of the gags that are caught off the west coast
29 of Florida are observed in less than thirty meters of depth, and
30 they are perfectly fine to be released without venting. We do see
31 the higher survival rates for those fish, and they are released in
32 good condition, but, for those gags that are not released in good
33 condition, they are, obviously, caught in deeper depths, and they
34 more frequently need to be vented, and discard mortality increases
35 significantly with depth.

36
37 In the future, future work, I'm happy to say that the work that
38 we've done in the past was -- We had to beg and borrow from various
39 funding sources to keep that work going, but it's now fully funded
40 with state funds, long-term, which is what we're kind of in the
41 business of doing, is long-term monitoring, because, as we know,
42 fisheries are dynamic, and always changing, and so we don't want
43 to just do a study and say, okay, we did that, and we understand
44 what's going on there, because it's always changing, and so it's
45 important to continue monitoring all this, and so continued long-
46 term monitoring is going to allow us to continue evaluating the
47 impacts of changes in fishing regulations and provide additional
48 data and analyses for stock assessments.

1
2 The mark-recapture data that I just talked about potentially could
3 be updated in the future, if we do get enough extended fish into
4 our datasets to try and evaluate the conservation benefits of that
5 increased descender device use. It's also important not just to
6 know whether descender device use helps fish, but also how many
7 people are actually doing it, and so that's another monitoring
8 need that's going to be ongoing in the future, and so, with that,
9 I would just like to thank you for your time, and I hope you found
10 this informative.

11
12 **VICE CHAIRMAN BARBIERI:** Great talk, Bev. Thank you so much. This
13 is a very nice overview that I think was very complementary to the
14 presentation that Angela gave, and actually Sue as well, in terms
15 of the intersection of life history and fishing activity
16 distribution, and so thank you very much. Let me see if there are
17 any immediate questions from SSC members regarding Bev's -- Okay,
18 and so I will start with Steven Scyphers and then Josh Kilborn.

19
20 **DR. SCYPHERS:** Hi, Bev. Thank you, and that was a great
21 presentation, and so you mentioned that about 41 percent of private
22 anglers said they had a descending device onboard. Did you guys
23 also look at how many of them had a venting tool, and then how
24 many of them might have both? I know some of Chelsey Crandall's
25 older work showed that Florida anglers tend to prefer the venting
26 tools, and use them more, and I wondered if that's something that
27 you guys were seeing.

28
29 Kind of a related question is the finding that it's really not
30 necessary in the really shallow areas, and is that something that
31 you all have a sense for, if most anglers are kind of aware and
32 following that type of guidance, or is that an area that's kind of
33 less certain?

34
35 **MS. SAULS:** Those are good questions, and we are collecting some
36 of that now. Last year, we added a question to the State Reef
37 Fish Survey intercept, or we actually added a couple of questions,
38 and one was the whether they had a descending device onboard, and
39 that was at the request of the Return 'Em Right folks, but, for
40 the individual species that they report release, we also ask
41 whether they used a venting tool or a descender device or both or
42 neither when they released those fish, and so we are collecting
43 that information. I haven't looked at it yet to do any analysis
44 on it, but we are gathering that information, and that's for
45 private boats, and we're actually doing that on both coasts of the
46 state, and so we're getting data for the Atlantic and the Gulf.

47
48 **VICE CHAIRMAN BARBIERI:** Great question, Steven. Thank you, Bev.

1 Josh Kilborn.

2

3 **DR. KILBORN:** Thank you. Thanks, Bev, and so you might have
4 mentioned this, and I just missed it, or maybe I just don't know,
5 but I get the sense that these fish are not being targeted, right,
6 and these are bycatch from people targeting other species, and is
7 that correct?

8

9 **MS. SAULS:** It's both. I mean, plenty of people will take a trip
10 not far from -- You know, in state waters even, try and catch a
11 legal-sized gag, and it's less -- You know, it's less likely,
12 especially during certain times of the year, but yes.

13

14 **DR. KILBORN:** Is that part of the information that you collect in
15 the State Reef Fish Survey, what they're actually targeting, versus
16 what's being caught?

17

18 **MS. SAULS:** I should have -- The way we ask that question, it's
19 whether they targeted and/or caught that species, and so we're not
20 asking that question, and that does get asked in the MRIP intercept
21 survey though, the primary and secondary species targeted.

22

23 **DR. KILBORN:** So do you have a sense of what's going on here? Is
24 there a lot of people that are actually targeting gag? I mean,
25 because, if there are, then the discard mortality, or the discard
26 rate, is really, really high, right, and so, if they're targeting
27 gag, they're not doing a good job, and they're discarding 90
28 percent of what they catch, and do I have that right?

29

30 **MS. SAULS:** Yes.

31

32 **DR. KILBORN:** So is there a mismatch between, you know, the
33 intentions of the anglers, versus what they're getting back out of
34 the water, or --

35

36 **MS. SAULS:** So those peaks, those summer peaks and fall peaks,
37 that summer peak is probably a little bit of both, and that's when
38 red snapper season opens as well, and so people are out probably
39 trying to target and catch both in the fall, and that's when the
40 fish move closer to shore, and people -- You know, social media
41 being what it is, people know that, and they go out and try to
42 catch them, but a lot of it is also just people trying to catch a
43 legal-sized whatever is in season, you know, red grouper, or some
44 people like to fish for white grunt, and it's -- You know, these
45 are reef-associated species, and they're all caught together, and
46 so, if you're targeting something, and not necessarily trying to
47 harvest, because the season is closed for gag, you're still going
48 to catch them.

1
2 **DR. KILBORN:** Thank you. I appreciate it.
3
4 **VICE CHAIRMAN BARBIERI:** Great questions there, and thank you,
5 Josh. John Mareska, please.
6
7 **MR. MARESKA:** Can you go to Slide 10 of your presentation? Beverly,
8 the question is kind of simple, and is this all of the for-hire
9 trips, or is this only the for-hire trips that included gag
10 observations?
11
12 **MS. SAULS:** These are only gag observations.
13
14 **MR. MARESKA:** Only gag observations? Okay.
15
16 **MS. SAULS:** Yes, and so it wouldn't show you trips or stations
17 where no gag were caught.
18
19 **MR. MARESKA:** So, spatially, over time, there seems to be a
20 dichotomy of inshore and offshore, except for June and July, and
21 can you explain why that's occurring?
22
23 **MS. SAULS:** What do you mean by -- Where do you see a dichotomy of
24 inshore and offshore?
25
26 **MR. MARESKA:** Well, if you --
27
28 **MS. SAULS:** Oh, I see what you're saying.
29
30 **MR. MARESKA:** If you go back and you look in the wintertime, you've
31 got inshore trips, where they're catching them inshore and they're
32 catching them offshore, and there seems to be nothing really out
33 on the shelf, except for June and July.
34
35 **MS. SAULS:** Yes, and so, June and July, that's red snapper season,
36 and it's also gag season, and those May trips, that are kind of
37 farther offshore, those are probably those multiday trips that
38 we've sampled. I mean, as soon as the season opens, and people
39 start targeting them, that's when you're going to see more of them.
40
41 **VICE CHAIRMAN BARBIERI:** Thank you for that, Bev. Any other
42 questions or comments? Nothing online? No? Okay. Well, thank
43 you very much, Bev. That was super informative, and a very
44 relevant talk, and so I really appreciate you coming to join us,
45 and not just a presentation, but addressing these questions.
46
47 **MS. SAULS:** I did want to address Dave Chagaris' talk for just a
48 second too, and we -- You had mentioned that you were working with

1 industry on fishing effort impacts of red tide, and we actually
2 see that in our State Reef Fish Survey estimates, and so, if you're
3 interested in those data, we have them. Thanks.

4
5 **VICE CHAIRMAN BARBIERI:** Okay, and so this completes our series of
6 morning presentations on gag abundance, movement, spawning
7 behavior, discard mortality, and environmental influences, and I
8 know that our lunch is here, but we have a little bit of time.
9 Are there any points of discussion that anybody would like to bring
10 up regarding this morning's presentations? Tom Frazer.

11
12 **DR. FRAZER:** I just have a question, and Bev's talk made me think
13 about it a little bit more, and I should have asked Sue the first
14 time, and, you know, there's real value, obviously, in observer
15 data, and so one of the issues that -- I mean, I'm just curious.

16
17 With regard to commercial longline observer data, what proportion
18 of those trips, and you may not have this, and maybe it's for Peter
19 and his team, but what proportion of those commercial bottom
20 longline trips have an observer, and do the observers collect any
21 biological data like sex?

22
23 **VICE CHAIRMAN BARBIERI:** Can you come to the microphone, Sue? Just
24 because, otherwise, the people online cannot hear us.

25
26 **DR. LOWERRE-BARBIERI:** I can't answer your question in terms of
27 how many observers. I have looked into that a little bit, talking
28 to Bev Barnett and the folks of the Panama City, or I think I meant
29 to look into that, and I don't have numbers for you, but, at the
30 workshop, Bob Gill was at that workshop, and he did reach out to
31 Charlie Renier, and we have been sampling some of his longline
32 samples since then. He has been working with captains that have
33 been willing to land their fish.

34
35 They gut them, but they keep the gonads there, so we can actually
36 sample the gonads, and so, for the most part, it's almost -- You
37 just can't get that from longliners, unless they're either willing
38 to keep the last day of the sample, possibly, because you need
39 those fresh gonads, and they want to gut them at-sea, but there
40 has been a group of fishermen, and Charlie, who have been just
41 incredibly helpful in working with us to try and begin to look at
42 some of that.

43
44 **DR. FRAZER:** I think that value, or that data, coming from Charlie
45 will be great, and there is others, I know, and the reason that I
46 was prompted to even ask the question was, you know, some recent
47 data that I saw from an offshore bottom longliner, right, where
48 they had a fair number of fish that were brought in and were

1 assumed -- Again, this is the problem, right, is they were assumed
2 to be males, but pretty reliable, and, when they actually aged
3 those fish, and they were large fish, maybe 25 percent at least
4 visually, and you can take that for what it's worth, to be males,
5 and the maximum age of those fish was only ten years old, right,
6 and the average was six.

7
8 Again, I think, as we see more of that data, we'll learn a lot,
9 but I am trying, like you, to figure out what that sex ratio might
10 look like away from these kind of more traditionally-sampled areas
11 and what their mating systems what actually look like.

12
13 **DR. LOWERRE-BARBIERI:** I don't know if that's Jay, and, I mean, I
14 have talked to Jay multiple times, and I know that Chris sampled
15 some of those, and I don't think they got the gonads. I am
16 surprised at those ages, if he was fishing where I thought he was
17 fishing, and we haven't gotten our ages back from Charlie yet,
18 from the fish that have come from Charlie, and we've seen what
19 looks like more males coming from his longline samples, which is
20 exactly what Jay brought up at our workshop, and, of course, there
21 is an issue of what gets discarded in high-grading, right, and so
22 I think Carrie's point, about what do you need to really get this
23 data, and this is what we talked about at the workshop too, is,
24 you know, we really do need to be working with these fishermen and
25 getting these samples, but setting it up in a way that they're
26 willing to actually land them with the gonads, which is not
27 traditionally how it's been done. We just can't answer that
28 question until we get the data, and we don't have that yet.

29
30 **DR. FRAZER:** That's why the observer data is going to be really
31 cool, and so I look forward to it. Thanks.

32
33 **VICE CHAIRMAN BARBIERI:** To add to that, I mean, if it's something
34 that helps us identify what areas of research, additional work
35 that needs to be done to supplement what we already have, right,
36 that can help inform -- Because this is such a complex issue, with
37 so many dimensions, that it's difficult for us to kind of wrap our
38 brains around everything, and so, yes, these additional data
39 collection efforts and studies will help us get there, hopefully.
40 Any other questions or comments or discussion points that anybody
41 would like to bring up before lunch? Will, hopefully you are on
42 the phone, because we couldn't hear you through the webinar, but
43 go ahead, please, Will.

44
45 **DR. PATTERSON:** I'm on the phone. Can you hear me?

46
47 **VICE CHAIRMAN BARBIERI:** Yes, we can. Thank you, Will. Loud and
48 clear.

1
2 **DR. PATTERSON:** Thank you. Some great talks on gag this morning.
3 To this last question about sex and trying to determine size-at-
4 age for different sexes and not having the gonads present. I mean,
5 obviously, if you want to do reproductive biology, you have to
6 have the gonads, but I just wanted to make folks aware of a new
7 study that Dave Portenoy at Texas A&M Corpus Christi leads that's
8 focused on a suite of different reef fishes in the Gulf to use fin
9 clips and DNA from fin clips, and so, in the case of gag, proteins
10 from blood to determine sex of the samples.

11
12 Hopefully -- It's a two-year study, and it's just getting underway,
13 and, hopefully, in the next couple of years, we'll have an approach
14 that would enable some of this, which is particularly important
15 for these commercially-landed fish that are gutted.

16
17 **VICE CHAIRMAN BARBIERI:** Will, thank you for that. Absolutely,
18 and, I mean, that would be fantastic, if that can be done, and
19 then perhaps, you know, development of methods that are not too
20 expensive, and/or time consuming, right, so we can actually get a
21 little more efficiency there in being able to use those genetic
22 techniques for sex determination, and, yes, that would be
23 fantastic. Sue, do you have a comment to that point?

24
25 **DR. LOWERRE-BARBIERI:** Will, I am sorry, because I'm afraid that
26 I was actually chatting about how to get some samples in Tampa Bay
27 when you were talking, but I did catch genetics and assigning sex
28 from fin clips, right, and is that what you were saying that your
29 new project is going to do?

30
31 **DR. PATTERSON:** For certain species. For gag, we'll do protein
32 work from blood.

33
34 **DR. LOWERRE-BARBIERI:** I don't know about the protein work from
35 blood, because I did a very extensive search to see if we could
36 use genetics to assign sex to gag, because, obviously, that would
37 have been really helpful to us too, and, with them being
38 protogynous species, we couldn't find a way to make that work. In
39 terms of the blood, how would that work?

40
41 **DR. PATTERSON:** So we can probably talk about the details offline,
42 Sue, but it's a proteomic-mix approach for gag.

43
44 **DR. LOWERRE-BARBIERI:** Okay. Yes, I would love to hear more about
45 that, because I wasn't able to find anything in the literature
46 that suggested, for a sequential hermaphrodite, you could do that.

47
48 **DR. PATTERSON:** Sure. We can talk offline.

1
2 **DR. LOWERRE-BARBIERI:** Great.
3

4 **VICE CHAIRMAN BARBIERI:** Again, I mean, this is the advantage --
5 You know, emerging techniques, right, emerging science that can be
6 brought to bear to help us improve the efficiency of some of the
7 studies that we're -- To understand some of these processes that
8 are really hard for us to understand. Any other questions or
9 comments? We have just a few minutes left before we break for
10 lunch.
11

12 Well, if not, then I would say we can break for lunch, but I want
13 to call your attention to our first agenda item right after lunch,
14 and so, as you eat your lunch, you can be not just chewing, but
15 also thinking about some of these topics, and, basically, you know,
16 tying a lot of the information that we heard about this morning,
17 a lot of the discussion points that were brought up this morning,
18 into these possible management modifications for gag and black
19 grouper, and so it's kind of applying a lot of that knowledge into
20 evaluating what we can do to manage the stock and rebuild the stock
21 to sustainable levels. With that, we'll break for lunch, and,
22 Ryan, help me here. I am thinking that we'll go for 1:00.
23

24 **MR. RINDONE:** (Mr. Rindone's comment is not audible on the
25 recording.
26

27 **VICE CHAIRMAN BARBIERI:** Ryan is thinking 12:45, which is a smart
28 choice, because, obviously, when we say 12:45, we never start at
29 12:45.
30

31 **MR. RINDONE:** I don't think anyone has accused this body of being
32 perfectly on time every time, and so --
33

34 **VICE CHAIRMAN BARBIERI:** I completely agree, and so we're going to
35 break for lunch, and we'll reconvene at 12:45 Eastern. Thank you.
36

37 (Whereupon, the meeting recessed for lunch on September 27, 2023.)
38

39 - - -
40

41 September 27, 2023
42

43 WEDNESDAY AFTERNOON SESSION
44

45 - - -
46

47 The Meeting of the Gulf of Mexico Fishery Management Council
48 Standing and Special Reef Fish, Special Socioeconomic, and Special

1 Ecosystem Scientific and Statistical Committees reconvened on
2 Wednesday, September 27, 2023, and was called to order by Vice
3 Chairman Luiz Barbieri.

4
5 **VICE CHAIRMAN BARBIERI:** All right, folks. I hope that everyone
6 had a good lunch and that folks are ready to return to the
7 discussions for today's meeting. Great presentations this
8 morning, and there was quite a bit of good discussion, but, this
9 afternoon, I think the main points is to evaluate how a lot of
10 this information that was presented in the morning, a lot of those
11 factors and processes that we reviewed, or learned about, matter
12 as far as informing potential management actions, right, for Gulf
13 gag, with the intent of generating a rebuilding plan that is
14 effective and that can actually achieve its rebuilding goals, as
15 projected, right, because we know we have so much process error
16 right now that we cannot really account for within a lot of our
17 traditional stock assessment processes.

18
19 With that very general introduction, I am going to ask Mr. Rindone,
20 who is going to be giving us this next presentation, an overview
21 of possible management modifications for gag and black grouper, to
22 please read our scope of work statement and then proceed with the
23 presentation to the committee.

24
25 **REVIEW: POSSIBLE MANAGEMENT MODIFICATIONS FOR GAG AND BLACK**
26 **GROUPE**
27

28 **MR. RINDONE:** Sure. Thank you, and this is a long scope of work
29 here, and so we're going to review these management alternatives
30 with you guys for gag and black grouper, and the council is still
31 considering what actions and alternatives to consider, and it has
32 requested your input, in light of this research that you've
33 recently been made privy to, to help support or not support some
34 of these decisions, as it might be. So just consider the
35 information presented and make recommendations, as appropriate.

36
37 There is not a document with this, because we are still trying to
38 draft one of the chapters to it, and so I didn't want to send
39 something incomplete there, but I was able to fold in the bag and
40 vessel limit analyses during the break and send those to Jess, and
41 so you guys will be able to look at that information in here as
42 well, and I also intend to present this to the AP, and get feedback
43 from them, and then also the council, ultimately.

44
45 Okay, and so I'm going to breeze through some of this beginning
46 stuff, because a lot of this is pretty well known to you guys, and
47 so you guys have reviewed the SEDAR 72 run that used SRFS, with a
48 terminal year of 2019, that found that gag is overfished and

1 undergoing overfishing, and so we put together Amendment 56, which
2 has been transmitted to the agency, that revises the status
3 determination criteria for gag, and so that 40 percent SPR, and
4 sets the OY at the ACL when the stock is overfished, and at 90
5 percent of MSY when it's not overfished.

6
7 We mentioned the eighteen-year rebuilding plan, and we also revised
8 the sector allocation to 65 percent recreational and 35 percent
9 commercial. The recreational ACT is 20 percent below the
10 recreational ACL. The commercial ACT is revised to 5 percent below
11 the commercial ACL, because of the IFQ program, and the quota is
12 set equal to the commercial ACT, as is typical for other IFQ-
13 landed species, and then the recreational fishing season is set to
14 begin on September 1 and close when the ACT, and not the ACL, is
15 projected to be met.

16
17 **VICE CHAIRMAN BARBIERI:** A question at that point, Dr. Crabtree?

18
19 **DR. CRABTREE:** Ryan, this Amendment 56, and so that's been
20 submitted? The council has taken action on that and submitted it
21 to the Secretary?

22
23 **MR. RINDONE:** Yes.

24
25 **DR. CRABTREE:** So it's September, and do we have a -- Maybe this
26 would be for Peter or someone, but do we have -- I assume this
27 then will not be in place by January 1.

28
29 **MR. RINDONE:** No, and it wouldn't be expected to be in place by
30 January 1.

31
32 **DR. CRABTREE:** Can you make a reasonable estimate, or anyone, about
33 when these changes to the ACLs and things might go into place,
34 best case? Are we talking 2025 or sometime --

35
36 **MR. RINDONE:** Next year.

37
38 **DR. CRABTREE:** Next year.

39
40 **VICE CHAIRMAN BARBIERI:** Peter, before you go there, it might be
41 helpful for everybody, because that's a good question, and it might
42 be helpful for everybody to also get an overview of what was to be
43 accomplished with the interim rule, right, versus the rebuilding
44 plan.

45
46 **DR. CRABTREE:** Yes, and so there is an interim rule -- I am trying
47 to refresh my mind, and, Peter, I think you ought to make it a
48 personal mission to see this is done before you're done.

1
2 **MR. PETER HOOD:** The survey says -- Where we're at is we're
3 operating under the interim rule right now, and we have the --
4 Roy, you will be familiar with this, but we have a notice of
5 availability and proposed rule package that will hopefully be going
6 up to Headquarters this week, and so, once the notice of
7 availability publishes, which should be soon, basically, it's
8 ninety days after that that the agency has to take final action to
9 approve, disapprove, or partially approve, but we're anticipating
10 that we'll get the proposed rule out and that then sometime in
11 January we'll be able to publish a final rule.

12
13 It somewhat depends on, you know, what we get for comments and
14 working on a response to comments for the final rule, and so,
15 basically, the ACLs, the revised ACLs, will go into effect in 2024,
16 and then, for the commercial sector, because we're -- You know, we
17 have the IFQ program, and what we'll be doing is doing a
18 withholding action of the quota, and it will be based on the
19 difference between what the interim rule is and then what the 2024
20 commercial ACL and ACT would be.

21
22 **DR. CRABTREE:** If I could ask, and so the interim rule measures
23 are somewhat different from the measures in this amendment?

24
25 **MR. HOOD:** Right, and so the interim rule is -- The recreational
26 part of it is based on MRIP-FES, and then, for what will be going
27 into effect through 56, that will be based on -- The recreational
28 ACL and ACT will be based on SRFS.

29
30 **DR. CRABTREE:** Thanks, Peter.

31
32 **MR. RINDONE:** All right. Anybody else? We had initially
33 transmitted the document on June 27, and then there were some
34 questions from GC, and so we had to send it back in on September
35 11, and Peter went through the whole rulemaking process with you
36 guys, and so we had -- In council interest in measures for gag and
37 black grouper to work on, which is the impetus for this document,
38 with suggestions for lowering the gag and black grouper
39 recreational bag limit, the establishing a vessel limit, and
40 spatial areas to protect gag, and black grouper were included, due
41 to perceived misidentification issues with gag.

42
43 Black grouper are currently also being worked on through a separate
44 amendment to modify the shallow-water grouper complex ACLs, and
45 you guys recall setting OFLs and ABCs for scamp and yellowmouth
46 grouper and black grouper and yellowfin grouper, and a black
47 grouper stock assessment, or other form of analysis, is set to
48 start in the fall of 2025, with FWC, with management advice likely

1 not available until sometime the following fall.

2
3 For gag, there's an operational assessment set to start in the
4 fall of 2025 also, to be completed say mid to late 2026, and it's
5 certainly the council's prerogative to request interim analyses
6 while the operational assessment is in progress, but that does
7 constitute additional workload for the Science Center, which
8 advises being sensitive to the species in rebuilding plans when
9 making those catch limit changes.

10
11 We went through the recent literature and presentations, and thank
12 you, again, very much to all of our presenters for taking the time
13 to provide that information to you guys, and we had briefly talked,
14 in the scope of work for the last agenda item, about the council's
15 goals and objectives for gag and black grouper, and so those are
16 listed here, and we'll just rehash them again real quick, and so
17 to reduce fishing mortality on male gag, constrain future harvest
18 to the ACL, increase the probability of rebuilding the stock, avoid
19 increasing discards, and reduce vulnerability of gag during
20 spawning to increase spawning success. Then, for black grouper,
21 it's mainly just to alleviate misidentification issues. Our
22 perceptions about the black grouper stock are pretty limited right
23 now.

24
25 **VICE CHAIRMAN BARBIERI:** Just a second there, Ryan, and I just
26 want to leave that there for just one extra second, right, for
27 people to kind of wrap their brains around this, right, in terms
28 of what are the actions that are being considered and how they
29 relate, right, to all of the issues that we heard this morning, in
30 terms of applicability to what we are trying to achieve here.
31 Trevor.

32
33 **MR. MONCRIEF:** Is there a general concern that the rule that was
34 passed isn't sufficient enough to rebuild this stock? Are these
35 additional measures to be taken?

36
37 **MR. RINDONE:** So we've had input from some stakeholder groups about
38 concerns about the probability of rebuilding the stock under the
39 measures that were passed in Amendment 56, but we don't have an
40 actual evaluation of what that probability is, from a quantitative
41 standpoint, and Amendment 56 does constitute about an 80 percent
42 reduction in possible landings, and it also is a considerable
43 reduction in the recreational fishing season duration, and so the
44 council also took additional steps with the recreational ACT, and
45 so, instead of managing to the ACL, we're managing to the ACT,
46 which is 20 percent below the recreational ACL.

47
48 Things that happened in the interim, we've seen, or heard, from

1 some of the commercial fishermen about things like self-imposed
2 trip limits, to try to make the quota that they have last as long
3 as they can, and it's kind of taking like almost like a discard
4 fishery approach to gag, and so we'll fish for other things, but
5 we'll carry just enough gag quota that, you know, if they catch a
6 few, that they're not having to throw them back.

7
8 Then, as far as like initial sentiments about the recreational
9 season so far this year, which started the first of this month,
10 they're out there, and people are definitely catching them, but,
11 typically, for the season that starts in June, effort in September
12 is pretty low, but we did expect there to be some amount of effort
13 shifting to occur from that June 1 start date to the September 1
14 start date, just because, especially in central-west Florida, and
15 in the Big Bend area, gags are the primary target species.

16
17 **VICE CHAIRMAN BARBIERI:** Then, on top of that, take into account
18 the fact that we're monitoring the recreational sector in-season,
19 right, and, I mean, the challenge that that presents when you have
20 such a short season and a very low quota, right, and so what's the
21 probability that those measures that are in place actually are not
22 going to be sufficient, right, to provide the level of reduction
23 in fishing mortality that we are looking for.

24
25 **MR. MONCRIEF:** All right, and so how we should be thinking about
26 this is essentially we've got an ACL that has been established
27 that's a large-scale reduction, and what are management measures
28 that will help manage, further manage, this species in a more
29 consistent manner for the fishery, like more days on the water, or
30 keeping it under the ACL, and like basically it's wide open. We're
31 having a discussion about we've recently taken an 80 percent
32 reduction, and let's kind of think about all the options that are
33 in front of us to make this the best situation possible, given
34 what just happened.

35
36 **VICE CHAIRMAN BARBIERI:** Right, and keep in mind, because we never
37 really go into detailed review of regulatory scenarios, right, and
38 we just don't, and so we basically look at stock status
39 determination, because we review the assessments, or the
40 analytical products, and we provide stock status determination,
41 and then we provide management advice, catch advice, right, and
42 then, from that point on, between the council, you know,
43 participating in the IPT, and the agency, SERO and the Science
44 Center, they will be developing all the measures that they feel
45 have some probability, hopefully a high probability, of reducing
46 fishing mortality to the level that will achieve the catch level
47 recommendation that we proposed, but, given all the uncertainty
48 and all the other factors, right, that come into play with the

1 level of complexity when you're talking about something like gag,
2 the council is asking us to look at all this information and try
3 to see what we can do to integrate some of these other factors
4 into what can be done, from the regulatory side of things. C.J.
5

6 **DR. SWEETMAN:** To that point, I think some of the main topics of
7 conversation that have gone on at the council level is specific to
8 the reduced quota, the shortened season, and kind of what average
9 landings typically would be. You know, it's estimated at -- I
10 think it was a few hundred fish a day, which really isn't a lot,
11 when you're talking about this in the broader scheme for the quota,
12 and, when you're thinking about accountability measures that we
13 have after the fact, which would be to, you know, pay back in a
14 subsequent year, when we already have a shortened season, I think
15 that's the number-one thing that we would like to avoid.
16

17 **VICE CHAIRMAN BARBIERI:** Then, just to add on top of that, right,
18 is the fact that, when you think about the role of discards, and
19 Bev's presentation showing the role of discards in total catch,
20 right, and we know that our catch level recommendations really
21 focused on landings, reducing landings, and our ability to reduce
22 those discards is challenged.
23

24 **DR. CRABTREE:** Maybe Katie can -- So we've historically, with
25 assessments -- We get the projections, and we need a certain F
26 reduction, and the model assumes that the F reduction is the same
27 for both the landed fish and the discarded fish, but what happens,
28 I would say the majority of the times, is what we do to reduce the
29 landed catch potentially increases the discarded catch, and then,
30 in the end, and I think this is what has happened in gag, in the
31 end, we don't achieve our objectives for reducing F, but I assume,
32 Katie, in this case, internally, this thing is assuming that we're
33 getting equal reductions in the discard and landed catches?
34

35 **DR. KATIE SIEGFRIED:** Yes, that's right, and one of the things
36 that we are going to look at, at the Science Center, is alternative
37 scenarios, where discarding would go up by some fraction, but
38 that's a thing that we don't have a lot of data for right now, and
39 it would be a bit of a dartboard exercise of figuring out is it 10
40 percent more, or 50 percent more, and we have good information
41 about discard mortality, but we don't have good information about
42 how discarding might increase for a species in a rebuilding plan
43 when it's inherently a multispecies fishery.
44

45 **VICE CHAIRMAN BARBIERI:** Ryan, sorry for stopping you there in the
46 middle, but I thought that, you know, it was important for us to
47 understand the following slides, right, the context of what's going
48 to be discussed later, to have a good understanding of where we

1 are starting this discussion here.

2
3 **MR. RINDONE:** All right. Possible management alternatives being
4 considered here are a recreational bag limit reduction,
5 institution of a recreational vessel limit, and a commercial
6 spawning season closure, and so, starting off with the recreational
7 bag limit, which is currently two per person per day within the
8 four-grouper aggregate recreational bag limit for gag, and then
9 four per person per day for black grouper.

10
11 Having the bag limit, such as going from two fish to one fish per
12 person per day, is not estimated to double the recreational fishing
13 season duration, and this is something that we commonly see with
14 many recreational species, and that's because most fishermen don't
15 catch the bag limit.

16
17 This updated bag limit analysis, from the last time that we did
18 this, uses 2020 to 2022 data. For the headboats, we use the
19 Southeast Region Headboat Survey. For the shore mode, we're using
20 MRIP-FES. For the private vessel mode, we're using SRFS, and we
21 don't use SRFS for the shore mode, because SRFS does not collect
22 those data, and then there is also a tiny bit of data, six trips
23 worth, from the Texas creel survey, and so that's included here
24 also, but the total -- We have sample size of 4,930 trips with gag
25 and 150 trips with black grouper.

26
27 The short take-away here is that reducing the gag bag limit from
28 two fish to one fish per person would functionally have no real
29 impact, and so you can see that here, in the harvest per angler,
30 and it looks like the survey-specific sample sizes of trips is cut
31 off a bit there, but, generally speaking, with the exception of
32 about 20 percent of -- I think it's 22 percent of SRFS trips, and
33 the rest of the harvest is essentially one fish or fewer gag per
34 angler per trip.

35
36 If we're looking at what this means, in terms of reduction in
37 landings -- So, by going from two fish to one fish per person per
38 day, it's about a 1 percent reduction in the shore mode and about
39 a 22 percent reduction in landings for the private vessel mode,
40 and no appreciable reduction in the others, and I guess, for
41 headboats, the important thing to remember is that a headboat
42 usually carries more than six people, and so, if you had ten or
43 fifteen gag landed on a headboat that's carrying fifty people,
44 that's still, obviously, quite fewer than one per person.

45
46 **DR. CRABTREE:** I guess I'm a little perplexed, and the SRFS
47 reduction is much greater than the MRIP reduction.

48

1 **MR. RINDONE:** The MRIP reduction is only for shore, and so the
2 MRIP-FES dataset has been replaced by SRFS for the private vessels,
3 but not for shore, because SRFS does not collect that shore-based
4 effort.
5
6 **DR. CRABTREE:** So going to a one fish per person per day potentially
7 gets you a 20 percent reduction?
8
9 **MR. RINDONE:** For private vessel landings only.
10
11 **DR. CRABTREE:** Which is the majority of the landings though, right?
12
13 **MR. RINDONE:** It's a good chunk of it, yes.
14
15 **DR. CRABTREE:** So it's not negligible then.
16
17 **MR. RINDONE:** Well, you will see why in a minute. Don't guess the
18 end of the story. Let me tell it to you.
19
20 **VICE CHAIRMAN BARBIERI:** He already knows the story, because he
21 reviewed his briefing book so carefully.
22
23 **DR. CRABTREE:** That's too many numbers.
24
25 **MR. RINDONE:** This can be distilled down pretty quickly. You will
26 see columns here for predicted landings and reduced effort
27 predicted landings, and so predicted landings assumes that we're
28 essentially just transplanting the effort that we would normally
29 have seen in June to September, and reduced effort predicted
30 landings assumes that there is some appreciable decrease in fishing
31 effort for a September start, as we've seen in years past when the
32 season opened on June 1.
33
34 Again, this is the first year where we've had a September 1 start
35 for gag in place, and so this will be a learning year for
36 understanding what that effort actually looks like, and so, that
37 caveat aside, these projections are very preliminary, but this is
38 what we do have to show you guys.
39
40 For 2024, the projected closure date, for just the predicted
41 landings, shows about forty-nine days open, and, by going to one
42 fish per person, you get about nine additional days, but the
43 important thing to remember here is that going from two fish to
44 one fish, and like that's for everybody for all fleets, and, as
45 you move further along into the years in the projection, you get
46 a little bit more out of each year, and so I think, at the end
47 there, for 2028, you're getting fourteen additional days, instead
48 of nine, and so it creeps up a little bit as the catch limits

1 increase, but it's not a -- It's not a huge increase. It's not a
2 doubling of the recreational fishing season duration by having the
3 recreational bag limit, I think is the important take-away,
4 because, by and large, most people are only getting one gag per
5 person per day as it is.

6
7 The vessel limit side of things, the same data that were used for
8 the bag limit analysis, and, essentially, what they're showing is
9 that the -- For the fleets that are harvesting one gag or fewer
10 per vessel, that constitutes about 90 percent of shore trips are
11 one gag or fewer, and 80 percent of for-hire trips, about 60
12 percent of private vessel trips, through SRFs, and about 45 percent
13 of headboat trips, and all six TPWD trips. Nearly all recreational
14 trips harvest one or fewer black grouper, and so I'm not going to
15 show that here.

16
17 We're not going to get into much about the black grouper here, and
18 so these are the gag data, and so the black bar would constitute
19 your shore landings, and so about 90 percent of shore landings,
20 and it's one gag per vessel, if you will, and, for the MRIP charter,
21 and so your for-hire fleet, about 80 percent of those trips are
22 only landing one gag per vessel, and, as you look down into the
23 data, you can definitely see that there are -- There are some that
24 are landing, you know, about less than 5 percent -- Just at or
25 less than 5 percent generally are landing, you know, two fish, or
26 four fish, and then six fish or more, and so, in the six fish or
27 more -- So, if you have a six-pack for-hire vessel, right now,
28 they would be able to land twelve gag, and so that six-plus would
29 include say a six-pack that lands the full recreational bag limit
30 for each passenger.

31
32 The lighter-gray there, in the middle of those five bars, under
33 the one column, that's SRFs, and so that's your private vessels,
34 and so about 60 percent of those are landing one fish per vessel,
35 but, as you look down into the data, you can see there is, you
36 know, about 10 percent that are landing two or three fish per
37 vessel, and about 5 percent are landing four, five, or six or more.

38
39 The clear bar there, or the white bar, is the headboats that are
40 landing about 45 percent, or about 45 percent of the headboats are
41 landing one gag, with a decreasing number going from two to five,
42 but then, for the six fish or more per vessel, that's about 18
43 percent or so of headboat trips are landing six gag or more per
44 vessel, and, again, headboats can land -- If they have fifty
45 passengers, and it's reasonable to think that they could land quite
46 a few gag, if they get on them and the season is open and they can
47 keep them, and they're going to keep them. Then all the TPWD
48 trips, obviously, fell under the one fish per vessel, since those

1 are a very rare occurrence.

2
3 For black grouper, again, almost all of it is in the one fish per
4 vessel or fewer, and so that one is one or fewer, and there are
5 some for-hire vessels that have a little bit higher CPUE.

6
7 This shows what the closure dates would be, like number of days
8 open, based on having no vessel limit or a four, three, or two-
9 fish-per-vessel limit, and so this is based on the gag season,
10 because it wouldn't have any appreciable effect on the black
11 grouper season, and so we would essentially gain -- For 2024, you
12 would gain about six days by going to a four-fish-per-vessel limit,
13 and so the recreational fishing season duration would be expected
14 to be extended by about six days, by going from a four-fish from
15 no vessel limit, and then, if you move all the way to 2028, you
16 would get a season extension of about ten days by going to a four-
17 fish-per-vessel limit.

18
19 Recall, or try to remember in our minds, that 2024 shows forty-
20 nine days open, and 2028 shows eighty-six days open, and you get
21 about twelve additional days by going to three fish in 2024, and
22 about -- It comes out to about three weeks, and so about nineteen
23 days, by going to a two-fish-per-vessel limit, and you get about
24 three weeks additional in 2028, and about five weeks additional if
25 you go to two fish per vessel by 2028, but an important caveat
26 here is that this is for everyone, and so this would be four,
27 three, or two fish per vessel for all vessels, private, for-hire,
28 and headboat, and, whether there's two people or fifty onboard,
29 it's four, three, or two gag, period.

30
31 Some of the pros for having a combined vessel limit for gag and
32 black grouper are that it wouldn't matter whether it was a gag or
33 a black grouper that was landed, which could ease any burden on
34 enforcement or on anglers that are struggling with identification.

35
36 We did have some discussion about this at the council meeting,
37 about the fact that everybody has got a cellphone in their pocket,
38 with at least a couple of apps on it that, you know, have pictures
39 of fish or things like that on it, and so there's more information
40 available now, and hopefully misidentification is less of an issue
41 now than it was perhaps like in the late 1980s and early 1990s and
42 times like that, but FWC reports that does still occur, and they
43 do still have intercepts with officers where officers are educating
44 anglers about, you know, this is this species, and this is that
45 species.

46
47 Some cons are that having a combined vessel limit could
48 disproportionately affect gag, which we think are more abundant

1 than black grouper, but, again, our last black grouper assessment
2 has been called into question a little bit by this
3 misidentification issue, and so it's something to think about.

4
5 Having a very strict vessel limit could result in an increase in
6 discards, and, thus, discard mortality, and also high-grading
7 behavior, and so trying to hold onto a fish in hopes of catching
8 one that's larger and then discarding the smaller one, and we don't
9 have a quantitative analysis of high-grading, like how often it
10 happens, but we do know that it is something that does happen.

11
12 Gag and black grouper have different spatial distributions. We're
13 starting to see a little bit more overlap in recent times, but,
14 still, by and large, the bulk of the black grouper stock is off of
15 southwest Florida, and the bulk of the gag stock is west-central
16 Florida and into the Big Bend, and so there's some overlap, but
17 there's not anything close to complete overlap.

18
19 It may result in a marked reduction in allowable retention for
20 vessels with multiple anglers, like we talked about, and so larger
21 private vessels and then for-hire vessels and headboats. Before
22 we get into the commercial spawning side of things, any comments
23 or thoughts about a vessel limit with respect to the research that
24 you guys heard and thoughts?

25
26 **VICE CHAIRMAN BARBIERI:** To start, Roy.

27
28 **DR. CRABTREE:** Well, a couple of things. It seems, to me, that,
29 if you change the vessel limit, the bag limit or the vessel limit,
30 and then you extend the season, that it's then neutral, in terms
31 of fishing mortality, and so it's not going to change the
32 rebuilding probabilities or anything, and so it seems, to me,
33 that's just a management choice that the council would make.

34
35 The grouping of black and gag, you know, we talk about
36 identification confusion, but isn't it really more of a
37 nomenclature? I mean, in this area, people call a gag a black
38 grouper, and, in the olden days, it was put down in the books as
39 black grouper, and it wasn't because they didn't know what it was,
40 and it's because they called it something different, and I question
41 whether the confusion, trying to identify black and gag, is any
42 greater than trying to identify any species of grouper, and so my
43 guess is there are a lot of people fishing who just can't tell one
44 grouper from the next, and I don't know if that's right or not,
45 but it seems, to me, that a lot of these are management choices
46 and ultimately don't change the resulting Fs, because I think
47 that's the basis of the analysis.

1 **MR. RINDONE:** To that?
2
3 **VICE CHAIRMAN BARBIERI:** Yes.
4
5 **MR. RINDONE:** Dr. Crabtree, your comment about its effect on the
6 probability of rebuilding I think is important for the council to
7 consider, because it did receive a lot of public feedback about
8 this desire to try to improve the probability of rebuilding, and
9 so, if these measures are going to appreciably affect that, then
10 that's valuable information for the council to have.
11
12 **VICE CHAIRMAN BARBIERI:** Steve Saul.
13
14 **DR. SAUL:** Thank you, Mr. Chair, and thanks, Ryan. Just to make
15 sure I understand, the tables that you were showing that have the
16 different management action alternatives and such, the predicted
17 landings, for each option, are well above the ACL, or the ACT,
18 right, and so am I -- Correct me if I'm wrong, but does that mean
19 that, regardless of which one of these options you look at, you're
20 essentially overharvesting? Is that the case?
21
22 **MR. RINDONE:** I am going to take a look at that, and I will get
23 back to you on that.
24
25 **VICE CHAIRMAN BARBIERI:** Okay. I have Trevor and then Jim Tolan.
26
27 **MR. MONCRIEF:** All right, and so, I mean, this species is kind of
28 out of the Mississippi range. I mean, we get a few, but, obviously,
29 not a lot, since the majority of the landings are in Florida, and
30 so my question is, do those who are more familiar with how this
31 fishery operates, especially in this time of year -- Is this a
32 targeted fishery in the fall, and is the majority a targeted
33 fishery in the fall? You know, are there are other reasons for
34 individuals to be out fishing in these same areas during that time
35 period, like for other species?
36
37 **MR. RINDONE:** So it's definitely a targeted fishery in the fall.
38 Gag tend to bite better when the water is cooler. You know, when
39 the water is warm, the bite is definitely not quite as vigorous,
40 and so, like during the summer months, you're going to have more
41 -- You're going to have a higher catch per unit effort for people
42 that are fishing offshore, which they tend to also be fishing for
43 other things, talking about like primary and secondary target
44 species, and they're going to be fishing in waters that are, you
45 know, twenty-five or thirty meters and deeper, and they will have
46 a good bite there, but the nearshore waters -- While there will
47 still be landings from nearshore waters, the bite there is not
48 nearly as intense until the water cools off, and so there seems to

1 be a relationship between how excited they are to eat versus what
2 the water temperature is.

3
4 **MR. MONCRIEF:** Yes, because, I mean, if it's a targeted fishery,
5 then the vessel limit might have a little bit more of an impact
6 than it would be if it was during a time in which those fishermen
7 are just out there for any number of the other species that they're
8 able to target.

9
10 **MR. RINDONE:** So, with the June 1 opening, that was definitely one
11 of the things that was discussed, was the overlap with a bunch of
12 other species that were also open to be harvested at the same time.
13 With September, there is fewer, and it really depends on, you know,
14 like, for example, what the state does with the private
15 recreational season for red snapper, and so, to the extent to which
16 the state has that season open and coinciding with gag, there would
17 be a couple of species of opportunity there to be able to chase,
18 but, especially in west-central Florida, and in the Big Bend, there
19 are more than enough people that will make a trip just to catch
20 gag, and regardless of what else is open.

21
22 **MR. MONCRIEF:** Yes, and that was my last question, was you could
23 see, by, you know, the figures, when it came to discards and
24 harvest and everything else, that -- I mean, there's certainly a
25 spike during red snapper season that's there, and you've got
26 another spike with a targeted fishery that's in the fall, and I
27 guess there were discussions about potentially altering that
28 opening date to overlap with another species, to kind of, I guess,
29 alleviate that targeted season in the fall, when they might be
30 more vulnerable or anything else, and, I mean, is that a discussion
31 point for today, or is that season pretty well set, because of the
32 rules?

33
34 **MR. RINDONE:** So we currently have the September 1 start date in
35 place, and that was put in place through the interim rule, and
36 then Amendment 56 will codify that, moving forward, as the opening
37 date, and the idea was that effort would be predicted to be lower
38 with a September start, compared to a June start, and so that's
39 why, under the bag limit, you saw the landings versus the predicted
40 reduced landings, and that's assuming that -- You know, the gist
41 of the difference between importing the observed effort from a
42 June 1 start to a September 1 start, and we have been seeing plenty
43 of people going out and catching them, but the degree to which
44 that effort is reduced from June is something that we'll have to
45 take a look at the data and measure after the fact.

46
47 **MR. MONCRIEF:** Just a more days on the water aspect.

48

1 **MR. RINDONE:** Yes, and so the idea was to try to have the longest
2 fishing season duration possible, by starting the season at the
3 least convenient and popular time to have it open, and so while
4 also avoiding the spawning season, which is primarily in February
5 and March, and so, historically, the recreational fishery has been
6 closed during the spawning season, and it has opened on June 1,
7 and so this shift pushes it later towards the fall, but like water
8 surface temperatures in the fall, in this part of the Gulf, and
9 like in yours, they're high.

10
11 It's warm, and so it doesn't really start to cool down for another
12 month or two, depending on when the cold fronts start to move in,
13 but, after those cold fronts start coming in is when that nearshore
14 bite can really start to pick up, and, you know, we can shed ten
15 degrees of water temperature in a span of weeks, and so it just
16 depends on what the weather does.

17
18 **VICE CHAIRMAN BARBIERI:** By the way, keep in mind, Trevor, that
19 all of these questions, and all of these issues, are fully informed
20 by data at this point, number one, and, number two, you know, it
21 involved serious points of disagreement about what would be the
22 best option, right, and so there are tradeoffs, pluses and minuses,
23 and you're trying to do the best possible, right, given the
24 information that you have and what you're trying to achieve, but
25 the probability of error is relatively high, because it's fully
26 informing the decision that you're making.

27
28 **MR. MONCRIEF:** That's kind of what -- It's somewhat empirically
29 derived, and you can make assumptions off of it, and the rest of
30 it is value adjustments, and it's not really -- That's a tough one
31 to deal with.

32
33 **VICE CHAIRMAN BARBIERI:** Okay. Jim Tolan.

34
35 **DR. TOLAN:** Thank you, Mr. Chairman. I think this is a perfect
36 slide for the question that I'm going to ask, and I'm going to go
37 back to a point that you made earlier. We're being asked to do
38 something very different for this part of the agenda, and so I'm
39 going to touch on something I've heard Doug talk about a number of
40 times, in that, over the last ten years or so at least, this
41 species is in trouble.

42
43 It's way down there, and we've got these drastically-reduced catch
44 levels coming in, and then we're going to cut some more off the
45 top of that, and the question I'm really struggling with is, in
46 our five-year prediction, we're looking at available biomass going
47 up by two-and-a-half times, and how confident are we in these
48 predictions, because that's a lot of biomass that we're saying is

1 going to be available for harvest when a species, over ten years,
2 hasn't really done anything, and so I'm just curious. How
3 confident are we? I am, personally, struggling with, like you're
4 saying, the value judgment. That's not something we typically
5 wade into. Thank you.

6
7 **VICE CHAIRMAN BARBIERI:** Well, and I might ask, you know, Katie to
8 weigh-in on her position on this as well, but, if these are based,
9 really, on the projections that were generated following the stock
10 assessment, as part of the stock assessment, process, I mean, we
11 know, right, the predictions about the future are likely to be
12 highly uncertain, right?

13
14 **DR. TOLAN:** To that point, are these MRIP-FES numbers for this?

15
16 **MR. RINDONE:** No, and this is -- So this is an amalgam. It's MRIP-
17 FES for shore, SRFS for private vessels, the for-hire telephone
18 survey for the for-hire vessels, and the Southeast Region Headboat
19 Survey for Texas.

20
21 **VICE CHAIRMAN BARBIERI:** So can you say chop suey?

22
23 **MR. RINDONE:** So just take all of that and mush it together.

24
25 **VICE CHAIRMAN BARBIERI:** Yes, Katie, please.

26
27 **DR. SIEGFRIED:** Thank you, Mr. Chair. Directly, a very quick
28 answer to the question is we have confidence intervals around the
29 projection that you can look at, and that's kind of the only
30 quantitative way that we can describe that, but this ACL in 2024
31 is a very large reduction to what has been, you know, on the books
32 in the past.

33
34 If that is adhered to, according to the model, there will be gains
35 made in the size of the stock, year to year to year, but I think,
36 even in 2028, it's quite reduced from what, you know, previous
37 estimates have been in the past, but it is highly uncertain, and,
38 if I may, while I have the floor, I have a question about this
39 analysis, I think sort of towards what Roy was asking at the
40 beginning.

41
42 If there's interest in increasing the probability of recovery,
43 basically, then it's probably worth learning more about fisher
44 behavior that changes effort based on bag limit, you know, the
45 sort of change in regulation, which I don't think most people know
46 that much about, and I know there have been fishermen surveys
47 asking what their behavior has been, but, around bag limit changes,
48 I think it's pretty sparse, and, from Beverly's presentation, that

1 showed that it's dominated by discards for this species, and that's
2 probably due to regulatory discarding, and not because we keep
3 throwing back big ones, and that doesn't make any sense, and so I
4 think that's -- I would like to know more about, when the bag limit
5 is reduced by half, how fishing effort changes, if they stop.

6
7 I mean, if there's any stakeholders in the room, if there's
8 stakeholder reps in the room, in addition to Ryan, and I know
9 you're a very good gag fisherman, but to tell me more about, okay,
10 will effort stop when there is a fish that they've captured, and
11 that's their bag limit, and will they keep fishing and continue
12 the regulatory discards? Is there any reason to think that the
13 effort will be reduced quite a bit, because it's not a linear
14 transfer, as Ryan pointed out, between the number of days of the
15 season, as opposed to the bag limit, and so I'm curious about
16 behavior for a change.

17
18 **VICE CHAIRMAN BARBIERI:** Excellent point, Katie. Yes, excellent
19 point, and we will have an opportunity, a little bit later, right,
20 to have more input from other stakeholders in the room that can
21 provide some insight on potential changes in fisher behavior, and
22 so, for the time being, let's resume our advice to Mr. Rindone,
23 right, as our representative of the fishing community.

24
25 **MR. RINDONE:** So you do want me to answer that? I'm still going
26 to go fishing, and so -- I think that's pretty widely demonstrated,
27 that, if there's something to go fishing for -- I mean, if someone
28 is recreationally fishing, it's probably not for subsistence
29 purposes, more often than it's for the enjoyment of being out
30 there, and so, even on a day where you don't return to the dock,
31 you know, with like a huge dock picture that you can take of your
32 catch, then it's --

33
34 You still got to get out on the water with your friends and have
35 a good time, and there's other appreciable intrinsic aspects of it
36 that would take somebody out on the water anyway, and, depending
37 on the time of year, a gag can be caught -- Like especially in the
38 winter, like up around where Mike lives, up by Cedar Key and some
39 of those shallow areas up there, you can see them, when the water
40 gets really clear, and you can sight cast them, and that's great
41 fun.

42
43 Whether you were going to keep them or not, it's a blast, and the
44 same thing like we've heard recently about greater amberjack, that
45 people like to catch and release greater amberjack. If you start
46 throwing live bait in at the surface, you can bring them up closer
47 to the surface, and they're -- They will wear you out, but, whether
48 you want to keep them or not, catching jacks is a lot of fun, and

1 the same with the mackerels and the other pelagics, and so, just
2 because the bag limit is reduced from two to one, I don't think
3 it's going to directly correlate to an appreciable decrease in
4 fishing effort, as long as there is some possible retention, and
5 especially if there's other things that can also be caught.

6
7 We have to remember that, you know, gag cohabitate with gray
8 snapper, and they can be caught in the same area as hogfish in
9 west-central Florida, and both of those have large enough catch
10 limits that, you know, they're worth pursuing, also.

11
12 **VICE CHAIRMAN BARBIERI:** If I may just add to that, real quickly,
13 Josh, and, Katie, there is also the issue here, and I think this
14 justifies the fact, right, that the council has taken this unusual
15 step in sending these proposed measures to us, right, for review
16 and discussion, and to get back with them with additional
17 information, is because this is not as linear as some of the other
18 cases that we usually see.

19
20 It's multidimensional in nature, right, and we are trying to
21 achieve a number of targets, right, trying to achieve a lot of
22 things that we want to happen, right, for the successful rebuilding
23 of this stock, and so there's this issue of reducing discards if
24 we can find a way to advise them on how to reduce discards, right,
25 and there's the issue of potential seasonal closures, and area
26 closures, right, and all of those things that are really spelled
27 out here in our agenda that, you know, how can we try and integrate
28 -- If we have any advice to provide, how can we integrate all of
29 this into our thinking to increase that probability of success?

30
31 We can set up rebuilding plans, and some stocks rebuild ahead of
32 schedule, and some have completely failed to rebuild, right, and,
33 I mean, think about greater amberjack, for one, and we have not
34 been able to, despite all of the management measures that we have
35 recommended and the council has put in place for decades, and we
36 have not been able to rebuild that stock.

37
38 There is something that we are missing, and, here, I think it's
39 the council's intention to reach out to us and say, if there's
40 something here that you guys know, that could improve the
41 probability of rebuilding success, what would that be, and what
42 advice would you provide to that point, right. Katie, to that
43 point.

44
45 **DR. SIEGFRIED:** Just a quick follow-up, and I appreciate Ryan's
46 characterization there, and that's very helpful, and my personal
47 opinion is that this is a good exercise, because it's always better
48 to -- I was chatting with some other folks in my group, and it's

1 always better to get the data, instead of having 100 percent
2 discard days, and so I know that's not a decision that I need to
3 weigh-in on, but it seems like, if you can stretch it out, you can
4 get more data, and you can not have a 100 percent discard fishery,
5 then that's a good thing to analyze.

6
7 **VICE CHAIRMAN BARBIERI:** Exactly, which, you know, was explicit,
8 right, in the way that we thought, discussed and thought, about
9 management advice for this species, was to avoid a total closure
10 that we felt would be detrimental. We have a queue, Dr. Crabtree.
11 Josh Kilborn.

12
13 **DR. KILBORN:** Thanks. It's not really a big point, but I just was
14 interested in what Ryan was saying. As a private angler, he's not
15 going to stop fishing, but I'm wondering how the behavior might
16 change if you enacted a vessel limit for those headboats that are
17 -- You know, because 18 percent of the landings are more than six,
18 six-plus, individuals on those headboats.

19
20 **MR. RINDONE:** For -- I do headboat trips, on occasion too, and for
21 those trips, it would definitely a challenge for those vessels to
22 try to find ways to avoid gag, because, typically, your headboat
23 anglers are going to be a wide swath, and you have people that go
24 on those trips every week, and they're actually really good anglers
25 that fish on those boats, and then you have people who have come
26 down from -- You know, from somewhere where they don't have an
27 ocean, and it's their first time fishing, and they will have a
28 CPUE that tends to reflect that, but, by and large, the fishing
29 practice is pretty similar across them, and like there's bottom
30 fishing involved.

31
32 There might be a couple of people that are fishing for pelagics on
33 the surface, or while the vessel is underway and trolling off the
34 back, but it's generalized bottom fishing, and so the probability
35 of interacting with a gag in those situations, if there are gag
36 there to be caught, would presumably be fair, and so discards would
37 be, I think --

38
39 As an angler and as a resource manager, discards would be my
40 primary concern about a vessel limit that small, especially when
41 you have that many passengers fishing in exactly the same way, and
42 it would make discards a real headache for the headboats, and for
43 the for-hire fleet in general, because, even if you don't have
44 sixty people, and even if you only have six, if you happen to get
45 into the gag, you can have three or four people hooked up, and now
46 it's a matter of having these fish on the surface, and arguing
47 about whose is bigger, and whose is going to get kept, and not
48 that that's going to, in and of itself, affect discard mortality,

1 but you do have to turn some of those fish away, if you have a
2 two-fish or a three-fish bag limit, and, at that point, that vessel
3 has caught its gag, and so now it has to actively avoid them, which
4 might be a little bit easier for a for-hire vessel, because, you
5 know, the captain, and if there's a mate, can coach the anglers to
6 do things a little bit differently, to try to specifically avoid
7 gag, and they can go to areas where they think will have a lower
8 probability, but a headboat is unlikely to anchor.

9
10 They're going to drift, and so, you know, they catch what they
11 drift over, and they can do some things to try to avoid these
12 species that they can't retain as well, but only so much, and,
13 again, they have a lot more hooks on the bottom.

14
15 **VICE CHAIRMAN BARBIERI:** Very good point. Mike Allen.

16
17 **DR. ALLEN:** Thank you, Mr. Chair, and, Ryan, this is -- I think
18 it's really helpful to see the bag limit simulations. It went
19 about like we thought it would, very modest, you know, improvements
20 in reduction in landings, if you lower the bag limit to one, which
21 is what we expected, but it's good to see it.

22
23 You know, we've been asked to comment on the idea of management
24 measures that would reduce discards, but, you know, the thing that
25 strikes me, from Angela's and Bev's talks this morning, is that
26 the discard mortality for these fish, in less -- In thirty meters
27 and less is pretty low, and, in fact, it's about on par with
28 species that we successfully manage with regular size limits and
29 modest bag limits, you know, reasonable bag limits, and so I wonder
30 if there aren't some opportunities to manage the female inshore
31 part of the fishery with a different regulation, like a harvest
32 slot or something like that, in that part of the life history that
33 there's a substantial portion of the year where these fish are in
34 fairly shallow water, and the discard mortality rates are less
35 than 15 percent, based on what they found, which is about on par
36 with what we see for things like spotted seatrout.

37
38 There may be an opportunity to do some different things with the
39 size limit as well, and I think that's worth discussing here, and
40 so I will throw that out for consideration, and the idea there
41 would be to focus on -- Dave mentioned this earlier, but to focus
42 on escapement. Like what is the escapement out of the female phase
43 and to the offshore reproductive phase of mature females and to
44 transition to males, and, you know, there may be some opportunities
45 there that we haven't considered, and so thank you.

46
47 **VICE CHAIRMAN BARBIERI:** Thank you, Mike, and, personally, I think
48 that those are very good points, because, yes, the slot, right,

1 could provide some level, and we know, from the inshore species,
2 right, that it can provide some level there of benefit that is --
3 You know, right now, it's not being accounted for, and, if the
4 release mortality nearshore -- Now, keep in mind that, as you know,
5 and that's your country now, right, that Big Bend Nature Coast
6 area, that catch rates can be pretty high there, and there's very
7 concentrated -- And people, I mean, zoom into that area, and I've
8 heard so many people that go there and max out and come back
9 tomorrow and max out, and the next day do the same thing, and it's
10 a very intense, you know, nearshore fishery there for that time of
11 year, but I think good points, right, to write down and think about
12 as we move this discussion along.

13
14 **MR. RINDONE:** Before we go past that, I got an answer on the
15 predicted landings. Let me pull up the text again, and I want to
16 be able to speak factually about it, and so she said it's what
17 could be caught if the anglers were unimpeded by ACLs and closures,
18 based on the start date of September 1, and so, by ACLs and -- So,
19 basically, assuming the effort is starting on September 1, but
20 then applying say a three-fish-per-vessel limit, or a two-fish-
21 per-vessel limit, that's what the predicted landings would be, and
22 this was done primarily for economic analyses, and so I should
23 have noted that in here, and I'll make that edit to the
24 presentation, to make that more clear.

25
26 **VICE CHAIRMAN BARBIERI:** Well, but, Ryan, in a way, if I might
27 interrupt, I mean, this is actually very informative, in a way,
28 because we can see, and I guess it's exactly what Trevor mentioned,
29 that, you know, the actual prediction is that, by following these
30 proposed regs, we would most likely go over and not be able to
31 constrain fishing mortality to the extent necessary.

32
33 **MR. RINDONE:** But that's without other measures, and so without a
34 catch limit in place and without a closure happening with that
35 catch limit. If you started on September 1, and you only allowed
36 three fish per vessel to be landed, by the time you got to the
37 normal season closure date of December 31, this would predict that
38 you would land approximately 743,000 pounds. If it was two fish
39 per vessel, then it predicts that, starting on September 1 and
40 ending December 31, you would land 600,000 pounds, and so that's
41 essentially what it's saying.

42
43 Now, obviously, we have ACLs and ACTs in place, and NMFS is going
44 to close the season when the ACT is projected to be met, and so
45 that's represented in the second-column-from-the-right and in the
46 days open in the right-most column, and so that's what the
47 predicted landings means, and so, Felicia, if you're listening,
48 thank you.

1
2 **VICE CHAIRMAN BARBIERI:** That makes sense, and I'm just thinking,
3 you know, about the challenge that we face to constrain, right, to
4 monitor in-season and constrain that, because nobody really knows
5 that the ACL -- Because everybody is fishing individually, and
6 we're not tracking what the landings would be, and so, you know,
7 having an ACL, I guess mentally, would perhaps provide some end
8 date, but constraining fishing mortality, when people are already
9 fishing out there and catch rates are high, is very difficult. I
10 think I have Roy first.

11
12 **DR. CRABTREE:** When I look at this, the season is essentially one
13 wave, and so you aren't going to get any look at the landings, and
14 you're going to project a closure date based on previous years,
15 right, because you're looking at seasons on the order of sixty-
16 some-odd days.

17
18 **DR. SWEETMAN:** In subsequent years here, we'll be using the State
19 Reef Fish Survey, and we can do that on a monthly level.

20
21 **DR. CRABTREE:** Okay, and so you might be able to get one look at
22 what's been caught? All right, and my take on this is that it may
23 be that anything you do that slows down the catch rates would help
24 with monitoring the fishery, if what C.J. is talking about comes
25 to pass, and then maybe that helps a little bit, but, generally
26 speaking, I don't see that any of these changes are going to have
27 a significant impact on discards, which is kind of what we're
28 focusing on, but it does seem, to me, that the timing of the season
29 might, and it might be worth looking at what species are commonly
30 taken with gag, and is it red grouper or red snapper?

31
32 I mean, to me, most people go grouper fishing, and, if you're going
33 to have closures, close the complex. I don't know if red snapper
34 is something that's commonly taken with gag, and I know you catch
35 gag when you're fishing red snapper sometimes, and, if that's the
36 case, you might achieve some gains in discards if you made sure
37 the season for gag was open at the same time as the season for red
38 snapper, but I haven't seen any sort of analysis like that, to see
39 what difference those things make.

40
41 **MR. RINDONE:** So, generally speaking, if we were to open gag on
42 June 1, the projected season duration would be much shorter, like
43 on the order of a few weeks, like a couple of weeks to a few weeks,
44 in the initial years, and we would also expect there to be a split
45 of fishing effort in deeper waters, like deeper than thirty meters,
46 like twenty or thirty meters, where people are going to be fishing
47 for red snapper, but, also, if your intention is to also try to
48 catch gag, and you want to do that with any appreciable CPUE, you

1 need to find cooler water, and so thirty or forty meters is where
2 you're going to start to get through a couple of -- You know, at
3 least one thermocline.

4
5 **DR. CRABTREE:** I don't know, and that may be. If they're
6 principally targeting red snapper, they might not change the way
7 they're fishing at all. It's just, if they catch gag, they would
8 keep it, rather than throwing it back. I don't know, and my point
9 is that's something that you could potentially analyze and take a
10 look at, because most of this, the vessel limits and bag limits,
11 I don't think ultimately affect how many discards there are or the
12 fishing mortality rates, and so it's just a management choice.

13
14 **VICE CHAIRMAN BARBIERI:** Before we go there, I mean, this might be
15 a take-home message, right, and, I mean, some methods that we are
16 to provide to the council, so they are, you know, better informed
17 about potential effectiveness of those types of measures that,
18 right now, that's exactly what they're asking, is for you guys to
19 give us some information on what could impact that likelihood of
20 success and to say, no, this wouldn't do it -- They need to know.
21 Going to the list here, I think I had Harry, and I'm sorry, and
22 you've been patiently waiting online.

23
24 **MR. BLANCHET:** Thank you very much. We may have driven past the
25 point I was after, and there was some discussion, and I believe
26 that Mike talked about an inshore slot limit, and there was some
27 discussion about comparing that to some of the more inshore
28 species, and I just wanted to point out that, because this is a
29 reef species, your GPS is more effective than it would be if you're
30 looking for something like speckled trout, that has a tendency to
31 move around, and there was a point made earlier this morning, in
32 a presentation, about some hook-happy fish that were tagged, and
33 so, while I think that that point might take some -- That it's
34 worth expanding, we do need to be careful about some of the more
35 unique characteristics of groupers and reef fish, as opposed to
36 some of the species, and so there may be some behavioral
37 differences, that it may not work as well as it would for something
38 like red drum, for instance. Thanks.

39
40 **VICE CHAIRMAN BARBIERI:** Well, thank you for those thoughts, Harry.
41 Trevor.

42
43 **MR. MONCRIEF:** I mean, I think we've come up with countless numbers
44 of ways or methods or schemes or anything else to try to lessen
45 the impact and make the situation better, and I was just wondering,
46 and so we've got social folks in the room, and we're making a lot
47 of value adjustments across-the-board, and we're kind of, you know,
48 projecting what we think about the fishery and everything else,

1 and, I mean, if we've got a list of options and pros and cons for
2 each one of them, what's the harm in sending it out to fishermen
3 and getting their feedback on it?
4

5 I mean, someone is going to have to stomach the change at some
6 point, if that's what is being considered, and you might want to
7 at least reach out to the anglers and see where they kind of lean
8 and what's the most feasible for them.
9

10 **VICE CHAIRMAN BARBIERI:** To that point, Dr. Frazer?
11

12 **DR. FRAZER:** Sorry that I missed the first part of the discussion,
13 but I'm just listening, in the last five minutes, about an issue
14 that I think is an important one, right, and so there are various
15 iterations. I mean, you can work through the math. If the goal
16 is to reduce mortality, right, I mean, essentially what you have
17 on the board right now are bag limits, vessel limits, and seasons,
18 right, and, you know, there is various iterations, or combinations,
19 of those that will lead to some desirable estimate, I guess, or
20 more acceptable estimate, of mortality.
21

22 I think what I heard Roy say was, sure, you know, that's probably
23 what I need, or the council needs, to hear from this group, which
24 option they choose, and that's a management type of a decision,
25 really, and so I would like to have a better understanding of what
26 the actual impacts, or effects, on mortality are of the various
27 seasonal closures, or configurations, in coordination, I guess,
28 right, with the other measures that are on the board, and so, you
29 know, that's -- I think, again, that's what the council is going
30 to be looking for. You're right that I think there's a social
31 component, a values type of thing, that is part of this, for sure,
32 and so I agree with Trevor as well.
33

34 **VICE CHAIRMAN BARBIERI:** Excuse me, Tom, but can you say that
35 again, that last part? You agree with Trevor?
36

37 **DR. FRAZER:** That's not the first time. Trevor has a large cranium,
38 man.
39

40 **VICE CHAIRMAN BARBIERI:** No, and we love Trevor. He's a brother
41 to me, and I'm just joking.
42

43 **DR. FRAZER:** But the idea though about the surveying fishermen,
44 it's not quite as simple as you, you know, might -- I think you
45 suggested it was simple, but I think people need to understand
46 that there is a process involved there, and it's a fairly lengthy
47 one, right, and there's a lot of compliance issues as well, and
48 so, if you want to go down that route, I would like to listen to

1 the social scientists and, you know, see what they have to say
2 about that.

3
4 **MR. RINDONE:** We certainly have things we have to adhere to, like
5 the Paperwork Reduction Act, but, you know, there are, you know,
6 perhaps academic partners that might not be so beholden to some of
7 those things.

8
9 **VICE CHAIRMAN BARBIERI:** C.J.

10
11 **DR. SWEETMAN:** Just general comments that we've heard from the
12 public thus far, as we've been kind of discussing these options at
13 the council level, is there seems to be a little bit more of a
14 pushback from the -- Well, in general, because of, obviously, the
15 management measures that were impacted on them with Amendment 56,
16 and I'm a little bit hesitant for any additional further regulatory
17 actions, but I would say, of the ones that we're talking about so
18 far, at least on the recreational side, more pushback on the vessel
19 limit, compared to the bag limit.

20
21 **VICE CHAIRMAN BARBIERI:** Right, and that's good to know, right,
22 that that was the feedback. I would say, you know, good discussion
23 about this option, and it's time to move forward and go to the
24 other options that are being considered.

25
26 **MR. RINDONE:** Yes, and I think valuable feedback has been gained
27 out of this, and so thank you, guys. All right, and so the other
28 action that we're considering herein is the commercial spawning
29 season closure, and so gag and black grouper are managed under the
30 grouper-tilefish individual fishing quota program, the initial
31 purpose of which was to allow commercial fishermen to fish when it
32 was best for them to do so, and the previous system of trip limits,
33 seasons, size limits, et cetera, was ineffective for those
34 commercial fishermen, and it increased regulatory discards. Gag
35 spawning peaks in February and March and black grouper spawning
36 peaks from January to March.

37
38 Some examples though of commercial closed seasons that have been
39 put in place for other IFQ program species, and so for North
40 Pacific halibut, North Pacific crab, and Alaskan rockfish, and the
41 reasons for these closed seasons vary from things like safety-at-
42 sea, catch monitoring and processing, reducing bycatch, market
43 considerations, and spawning seasons.

44
45 You guys remember Chris Stallings adoption of Ernst Peebles' SHELF
46 egg project, and so I really appreciate Chris having come in and
47 talk to you guys about that, and so just highlighting here that
48 black grouper, for the upper-red bar, and gag grouper, for the

1 lower-red bar, and then bolded out are their peak spawning months,
2 and so black grouper is January to March, and then February and
3 March for gag grouper.

4
5 Just thinking about the possibilities for our commercial closed
6 season, you know, we heard from Sue, earlier today, about the zero
7 percent male observed from the work that was done in the Edges,
8 and the Edges is closed seasonally from January through April, and
9 so one possible take-away from this is that, just because something
10 is closed for a specific period of time, that, if it's not closed
11 continually, then you're still allowing fishing effort to occur in
12 there, and, also, from a fisherman's standpoint, if you're closing
13 it for part of the year, to protect something, that means there's
14 something there to be caught, and so those fishermen will go and
15 fish there when it's not closed.

16
17 Then we also heard -- These slides are very, very fresh, and so
18 please nobody judge me on these, and the stress-induced ovarian
19 plugs in the mature female spawning fish -- I think Hayden has got
20 a picture that she's hopefully going to send me that I'll be able
21 to use to gross-out the council, and I'm looking forward to that,
22 and, if these mature spawning females are putting under a severe
23 stress event, which, you know, perhaps that's from being caught
24 and hauled up from thirty or forty or fifty meters, or perhaps
25 it's from some environmental factor, or being chased by a shark or
26 a dolphin or whatever it might be, you know, and they end up not
27 spawning for the rest of that season, as a result of that plug
28 forming, then, obviously, that's a potential loss in spawning
29 output for that particularly spawning season from that individual.
30 I reserved this for Hayden's awesome picture, which I will plug in
31 there later, no pun intended.

32
33 As far as possibilities here, establishing a commercial season
34 closure for gag and black grouper, you know, would we do it January
35 through April, or would we just do it February and March, like
36 what was instituted in the past, or perhaps February 15 to March
37 15, which was the peak of the peak, if you will, for gag, and, you
38 know, pros would be that it could alleviate direct fishing pressure
39 during spawning activity, and, you know, without knowing the
40 frequency with which these plugs occur due to stress from fishing
41 activity, it could reduce some of that, presumably, but, again, we
42 don't have the information to know the frequency with which those
43 plugs form due to stress from fishing in a spawning season, and so
44 we wouldn't have that data quantitatively.

45
46 The downside to it is that we would almost certainly expect there
47 to be an increase in regulatory discards during a spawning season
48 closure. However, we have heard from representatives from the

1 commercial vertical line fleet about their ability to redirect
2 their effort and, to some degree, also for longliners this year.

3
4 With gag being under such a smaller commercial quota for them,
5 there was a shift south, away from the Big Bend and West Central
6 Florida, to fish more so on red grouper, and we talked briefly
7 about some of the self-imposed application of trip limits based on
8 how much quota these individuals had, to try to spread out their
9 gag quota throughout the year and try to throw back as few of them
10 as they could get away with.

11
12 It would impact -- Having a commercial closure for gag and black
13 grouper would impact the markets, with respect to the availability
14 of gag and black grouper, especially with gag, since it has such
15 a small commercial quota, and whatever was harvested in January
16 wouldn't be expected to carry very far into February and March,
17 and any positive effect on spawning closures, on spawning stock
18 biomass, is questionable for many species, and it's just not been
19 demonstrated yet for gag, and, again, if we think back to, you
20 know, the Edges, and having a spawning season closure in the Edges,
21 and we're still seeing considerable fishing pressure occurring
22 there outside of the spawning season. We've got some hands.

23
24 **VICE CHAIRMAN BARBIERI:** Okay, and so that completes the commercial
25 closure season possibilities?

26
27 **MR. RINDONE:** I think so. I think that's the last slide. Oh, and
28 so the last thing I have is just this matrix here of looking at
29 some of the main tenets of the things the council was looking at
30 and whether, based on the information presented, we had any
31 expectation that these things were going to be successful, and
32 none of these things are going to be positive for discards. We
33 would expect all of them, to some degree, to increase discards.

34
35 We do see some appreciable increase in the recreational fishing
36 season duration with a strict enough recreational vessel limit,
37 you know, once we get down to like two fish or three fish per
38 vessel, but that has to include the for-hire and the headboat
39 vessels as well. Otherwise, you end up losing that benefit there.

40
41 As far as decreasing the fishing mortality during the spawning
42 season, the recreational fishery isn't open during the spawning
43 season anyway, and so that's why those aren't applicable, and, if
44 it's closed, and we think that the difference between discards and
45 harvest is such that it would result in a net benefit for the gag
46 stock, that it's possible that a commercial spawning season closure
47 could have some benefit there, and, as far as decreasing fishing
48 mortality on males, we don't expect any of these measures to

1 appreciably benefit that goal.

2

3 **VICE CHAIRMAN BARBIERI:** Ryan, before we start the queue, I like
4 -- Can we go back, Jess, to that -- That last slide for questions
5 is cute, but this one I think is very useful, right, because that
6 helps us visualize the different things that we are trying to
7 achieve, or get improvements on, right, as far as the suite of
8 regulations that we are considering, and so, with that, I think we
9 are starting the discussion on the seasonal commercial spawning
10 season closure with David Griffith.

11

12 **DR. GRIFFITH:** Thank you, Mr. Chair. I just wanted to say that,
13 in terms of impacting markets -- I have a couple of issues,
14 actually, but it doesn't seem to that -- It seems like there's a
15 high substitutivity among different kinds of grouper, that people
16 don't really differentiate whether it's gag or red or black or
17 whatever, and so I don't know that that would be something that
18 would be a con here.

19

20 Then the other thing is that, whenever you reduce the season for
21 something, even though it's a small reduction, right after it
22 opens, you might have something like derby fishing going on, and,
23 like you said, people are going to target them heavily right after
24 they open up, but I don't know whether that would occur or not
25 either, and I just -- Before the IFQ, that was an issue, the derby
26 fishing.

27

28 Then it does -- A lot of the fishermen that I interviewed, when I
29 was doing the IFQ study, did say that they fished over the entire
30 resource, and so that displacement of effort would probably go on,
31 like going down like you said, going further south and fishing for
32 red grouper, and so I would agree that that would also, you know,
33 take some pressure off this species. That's all. Thank you.

34

35 **VICE CHAIRMAN BARBIERI:** Thank you for that, David. That's super
36 helpful. Trevor Moncrief.

37

38 **MR. MONCRIEF:** I think my -- I mean, the market will have fish no
39 matter what. I mean, the concern, on my end, would be this impact
40 on the fishermen themselves during that time period, and so my
41 question would be what proportion of landings of gag occur in the
42 time period between January and April, just roundabout, and it
43 doesn't have to be exact, but just -- Is it a lot? Like is the
44 pre-Lent market good, or is it kind of --

45

46 **MR. RINDONE:** The market is great for it. There's no competition
47 with recreational vessels, and so the commercial vessels, insofar
48 as it relates to gag, they have the run of the show. Red grouper

1 is open during that time, and so you will see recreational vessels
2 out trying to fish for red grouper also, but, in areas where you
3 can catch more of one and less of the other, and, you know, the
4 commercial guys tend to know where those areas are, and I'm sure
5 some recreational fishermen do as well, but the commercial guys
6 will avoid the red grouper areas, in part to -- You know, if they
7 don't have quota for red grouper, but also to avoid the
8 recreational fishermen.

9
10 When you're a commercial guy, you know, just like if you're a for-
11 hire guy, your spots are your livelihood, and so you don't want to
12 put yourself in a position to be sharing, and so -- But, January,
13 through about midway through April, is a peak landing time for
14 commercial gag, and then it kind of tapers off in like a mean
15 oscillation throughout the summer.

16
17 Then, once we get towards the latter end of the year, like late
18 October or early November, you will see it start to pick up again,
19 and especially for the vertical line, and for the dayboats that
20 are going out in November and December, once those cold fronts
21 move in and it becomes easier to get those fish in twenty meters
22 and less, and landings pick up then too, and so the highest
23 landings are generally from about November through April, and then
24 they're lower in the summer.

25
26 **MR. MONCRIEF:** Okay, and so, I mean, essentially, the closure --
27 We're essentially trying to just maximize reproductive success of
28 the fish that are in the water during that time period, but, in
29 order to do so, you would be negatively impacting a fishery in
30 which that's their prime time to target and sell, and, I mean,
31 that's for a lot of commercial fisheries too, that pre-Lent time
32 period, and so that would be a tough one to bounce, and it's
33 another value judgement, and that's all.

34
35 **VICE CHAIRMAN BARBIERI:** Thank you, Trevor. Doug Gregory.

36
37 **MR. GREGORY:** Thank you, Mr. Chair. I have a couple of comments.
38 With regard to any effort shifting from gag to the south, I would
39 be more concerned with the impact on black grouper than I would
40 red, since black grouper are more depleted than gag are, given
41 that they don't mature until they're thirty-two inches, or thirty-
42 three inches, total length.

43
44 Also, with regard to the market impacts, most restaurants are going
45 to serve you Asian fish anyway, if you order grouper, and so I
46 don't know what that will actually do. Even here in Key West, I
47 find that pretty common.

48

1 With regard to the vessel limit, since there's such a great
2 disparity in potential impact on headboats, it might be worth
3 looking at having a different vessel limit for headboats, charter
4 boats, and private boats, and shoot for an equitable reduction in
5 harvest for each one, rather than an equitable number of fish per
6 vessel.

7
8 In other words, if the private boats are going to be reduced by 20
9 percent for a one or two fish per vessel, what catch rate, or fish
10 per vessel, would give a 20 percent decrease with headboats and
11 charter boats? That way, it would be equitable across-the-board.
12 Thank you very much.

13
14 **VICE CHAIRMAN BARBIERI:** Thank you, Doug. Good thoughts. Will
15 Patterson.

16
17 **DR. PATTERSON:** Thank you, Luiz. This is a really interesting
18 discussion here about management options and alternatives for gag.
19 Looking back to the scope of work, it states that the council is
20 still considering which actions and alternatives to include and
21 has requested SSC input on the evaluation of the data included in
22 the document to support these decisions.

23
24 Most of the discussion is around language in the PowerPoint that
25 says things like "could reduce discards", or "would likely shift
26 effort", and there's a lot of sort of supposition and conjecture
27 in the conversation, and we're not really looking at data, or
28 analytical products, and so I think the SSC is venturing into
29 waters that they probably shouldn't, and promoting, or discussing,
30 or endorsing management alternatives, instead of examining what
31 the likely effect of those alternatives, given analytical products
32 and estimates, that can be objectively utilized to evaluate those
33 things.

34
35 **VICE CHAIRMAN BARBIERI:** Thanks for those thoughts, Will. I
36 personally open the floor for others to weigh-in, right, and those
37 are thoughts that we need to discuss, and I tend to disagree with
38 your view there, Will, on this, because I think that the council
39 realizes that there is a lot regarding gag, the life history,
40 population dynamics, fishery dynamics, right, a lot of information
41 that we could consider to be scientific information, that they are
42 not as well knowledgeable, or well informed about, basically
43 because the data is limited, and a lot of this analysis could not
44 be completed, and the council explicitly, and I believe there was
45 a motion that was made -- For this issue to come before the SSC,
46 where they requested the SSC to weigh-in.

47
48 We received a number of scientific presentations this morning on

1 the issues that, in my view, are very relevant to this, and so
2 it's not a matter of picking preferred alternatives, and it's not
3 a matter of even proposing alternatives to the council, and I think
4 it's a matter of providing scientific information, or providing
5 scientific advice, to the council on what measures could be
6 productive in improving that probability of rebuilding or in
7 reducing fishing mortality, right, and so, for example, I mean,
8 Mike Allen talked about the slot limit, that this is something
9 that's really a discussion of how much would that be able to
10 obtain, in terms of reducing fishing mortality, and what would be
11 the gains, right?

12
13 Mike proposed this as a thought process, and maybe you were not -
14 - But he proposed that, and several of us think that, because the
15 presentations this morning talked about fishing in shallower
16 waters, where you get actually fairly high catch rates of females
17 that are just about migrating to the spawning grounds, to perhaps
18 transition there, right, and there will be benefits to --

19
20 **DR. ALLEN:** Yes, and my point there was based on the conversation
21 this morning that the discard mortality in shallow water is low.
22 It's relatively low, and so you could consider those type of
23 length-limit-type evaluations for that part of the fishery.

24
25 **DR. PATTERSON:** Luiz, can I speak to that, real quick?

26
27 **VICE CHAIRMAN BARBIERI:** Absolutely, Will. Go ahead.

28
29 **DR. PATTERSON:** Sorry I'm not there in the room, but, anyway, I
30 think what Mike is proposing is an interesting idea, but it's
31 really a hypothesis, and we don't have any analysis, you know, and
32 so maybe the consensus in the room is that, for a fish like gag,
33 where some portion of the stock is in fairly shallow water, and
34 it's a broad shelf that takes quite a run to get deeper than thirty
35 meters, then perhaps having a slot limit, particularly for females
36 targeted in the fall fishery, might have some conservation benefit,
37 right, but we're still back to that might have some conservation
38 benefit without actually having an analysis performed to inform us
39 whether what we're thinking is as intuitive as it sounds, or maybe
40 there's something counterintuitive that we're missing, that
41 wouldn't be brought forward unless we had an actual analysis to
42 look at.

43
44 **VICE CHAIRMAN BARBIERI:** Will, we definitely don't want to do a
45 back-and-forth here, and that's not my intent, but, just to help
46 clarify, if that idea was never considered by the council, or was
47 never an SSC recommendation, there is no reason why we would have
48 an analysis to that effect in front of us to analyze, and so just

1 the fact that it was brought up, and we can actually make a
2 recommendation, as an advisory body, that that analysis be put
3 together, even if it's like a simulation type, right, and we had
4 Nick Farmer come and present to us what would be the likely
5 benefits of, for example, a slot limit for red snapper, and we
6 learned there that, given the depth range of red snapper, that
7 would be minimal to no, and so that was informative.

8
9 Having this discussion, and, yes, it's based on qualitative, right,
10 but I don't think it's a lack of information. The information
11 doesn't have to be exclusively quantitative to be valid. I mean,
12 oftentimes, an interpretative capacity here, and the way that we
13 use this information to provide advice to the council, is
14 qualitative in nature, and I don't see that as a big advantage.
15 Trevor, do you mind if I just go to Sean, unless you have something
16 to that point? Sean, please.

17
18 **DR. POWERS:** I wanted to echo what Will was saying, and I don't
19 see a whole lot of data or analysis here for us to comment on, and
20 I understand the exchange that you and Will had on this, but to me
21 then -- I mean, our opinion is just that. Our opinion is really
22 no more informed than the AP would have, or any of the advisory
23 panels would have, since we haven't had a whole lot of data, and
24 I do -- I would advocate the middle ground, and I think we can
25 give our response, and our opinions, but I just think it needs to
26 be couched on the obvious thing, that there was no specific data
27 or analysis to look at, and so, when they weigh our input, they
28 might give it just as much weight as an advisory panel, because I
29 think they're about similar.

30
31 **VICE CHAIRMAN BARBIERI:** Thank you for that, Sean. I understand
32 your points, and Will's as well, and, I mean, I can see why, but
33 the issue is, you know, considering the lack of data that's
34 available for a lot of these analyses to be done, do we provide
35 advice best in our professional judgement, right, or do we just do
36 not provide any advice at all? I would rather do the latter,
37 right, that's based on our professional judgement, even if it's
38 perhaps not based on quantitative analysis. Trevor.

39
40 **MR. MONCRIEF:** Just I like the direction that Mike was going, and
41 I get the conversation, right, and everyone is kind of put it into
42 a tough spot, and I've said it multiple times, and these are more
43 value judgements, for a lot of these discussions that we're having,
44 that aren't going to take place here, but we heard it this morning,
45 and we talked about it.

46
47 Anything that increases the probability of a female going to a
48 male is likely going to have a positive impact on the stock as a

1 whole, right, and so the things to consider, which you don't have
2 analysis for, or real hard numbers for, like slot limits in close,
3 you know, or upper-level size limits that might have it, and then
4 one I wanted to bring up, just to get someone's take on it, whether
5 it be the council members sitting in -- But it's something that we
6 haven't really touched on, and don't really talk about, but the
7 fathom closure, the twenty-fathom closure. If it exists, and it
8 is a rule, how does that have an impact, and does expanding that
9 have an impact, or anything else like that, and is that something
10 to be considered?

11
12 **MR. RINDONE:** So the spatial side of things -- You will note, under
13 the council interests and measures for gag and black grouper,
14 spatial areas to protect spawning gags, addressing that particular
15 measure has been put off until a future document, because doing so
16 results in a much larger and more involved research effort into
17 age and length composition of fish, and different spatial areas,
18 compared to the general population, and trying to figure out which
19 areas might be candidates, versus others.

20
21 We just didn't have the time to be able to do that and fold it in
22 with this in an expeditious fashion. The measures that are in
23 here are things that the council can address in comparatively short
24 order, whereas we're looking at probably six to eight months' worth
25 of research to bring options for the spatial side of things.

26
27 **VICE CHAIRMAN BARBIERI:** John Mareska.

28
29 **MR. MARESKA:** I like Mike's idea, and I'm supportive of that, and,
30 if we can look at some evaluations into that in the future, but I
31 also think that expanding the temporal closure for spawning
32 seasons, and so we're not talking about the energetics of the fish
33 and building up the egg biomass, and then the migrations they have
34 to make out to those spawning grounds, and so, if some of these
35 original goals here are to, you know, rebuild the stock and
36 increase spawning success, and we really haven't had a lot of
37 discussions on what we can do to do that, the slot limit I think
38 is one, but then, if we're going to protect more of those females
39 that are getting a larger size that can become males, then we need
40 to also have additional measures to make sure that they get out
41 there, and maybe closing it prior to the spawning season, rather
42 than just at the spawning season, will ensure that success some
43 more.

44
45 **VICE CHAIRMAN BARBIERI:** To that point, Paul?

46
47 **DR. MICKLE:** Thank you, Mr. Chair, or Vice Chair, or whatever you
48 are today, and I don't mean any -- Luiz, thank you. With John's

1 statement, and what he said, I took the inference that that
2 statement buys into the sperm limitation hypothesis, right, of
3 females becoming males, and that's the stock will be better off.

4
5 We've seen presentations here today suggesting a potential of some
6 support to that, but there's still a lot of argument with the
7 biologists in the state, and the federal levels, of whether this
8 is a sperm-limited stock or not, or if that's a factor in the
9 reproductive success and the stock structure and success in the
10 future, and so I would think that maybe the council is looking for
11 us to try to maybe take somewhat of a quantitative stance on that
12 very difficult question to ask.

13
14 If everyone buys in that it is a sperm-limited stock, and that
15 that female-to-male transfer may be the golden bullet in the future
16 of management, then I think some of these choices become a little
17 bit easier, but we're very split on that, and I'm not sure that
18 I'm bought-in either way, but having more large females -- I think
19 we would maybe all agree that's a really good thing, and so maybe
20 a slot is, but I wouldn't certainly make a recommendation, as a
21 scientist, using the sperm limitation justification, and I just
22 don't think we have enough science there to lean on that, or I
23 certainly don't feel that way, and so I was just answering to that
24 point, Luiz, Mr. Chair, Mr. Vice Chair. Thank you.

25
26 **VICE CHAIRMAN BARBIERI:** Okay, Paul. Just before you talk, John,
27 and I will give it back to you, I think that the discussion that
28 was had, and this was taken into account in the SEDAR 72
29 assessment, right, is the fact that you're dealing with sex ratios,
30 right, and so spawning success, reproductive success, right, and
31 not just spawning, but reproductive success, will have to be
32 accounting for both sexes, of course, right, for sexual
33 reproduction.

34
35 When you have a predicted sex ratio, right, and you have an
36 observed sex ratio, from earlier studies, before the fishery
37 really, really expanded, that shows a higher proportion of males,
38 and I think this is the way I'm thinking about this, and I'm
39 thinking about 15 to 20 percent males, which is already a very
40 different sex ratio than we see for most of the gonochoristic
41 species, right, that we expect primarily to have 50-50, but, since
42 there is a, you know, hermaphroditic species, right, that has this
43 mating system where the males become large and dominant, and they
44 form harems, and so the idea that having to have enough males in
45 the population, and that now the assessment itself predicted that
46 we are at 2 percent, from 2015 to 2017, I think that this might
47 represent -- I mean, I think it's a viable hypothesis that this
48 has something to do with improving spawning potential for this

1 stock.

2

3 Taking into account the rebuilding of sex ratio to something that's
4 more, right, like what it used to be, or at least a move in that
5 direction, would have a positive impact, and so I think I agree
6 with you that, you know, nothing was discussed, or demonstrated,
7 regarding sperm limitation itself, right, but that depressed sex
8 ratios -- They have to be, right, because they are so skewed,
9 right, and, of course, we don't know for sure, but that they are
10 likely to have some level of impact, and I think it's something
11 that needs to be taken into account. John Mareska.

12

13 **MR. MARESKA:** I wasn't -- Paul took the wrong way, and I thought
14 he was leading towards the sperm limitation, but, no, and he was
15 actually just about getting more females to the spawning ground to
16 increase the productivity and the biomass of the spawning stock
17 biomass, and so expanding the time, and maybe even a spatial
18 closure, to make sure that -- Instead of the fall fishery that is
19 hitting those females that are trying to move out, and they get
20 more protection over time to do that.

21

22 The sperm limitation, I mean, it's complicated, and so the area
23 that was no protection had the highest sex ratio of males, and so
24 the fact that the MPAs -- That sex ratio hasn't increased, and
25 that doesn't make sense either, and so I had a question earlier,
26 and I was curious, you know, and the 32 percent that's in the
27 virgin biomass -- Where did that come from, and how was that
28 calculated, and is that realistic?

29

30 **VICE CHAIRMAN BARBIERI:** Sue, if you don't mind, approach the
31 podium and address some of these questions, because I think -- I
32 mean, this is the issue, and those are important issues to be
33 taking into account.

34

35 **DR. FRAZER:** I will always defer to Sue, if she wants to talk
36 first, but I'm happy to share some thoughts.

37

38 **DR. LOWERRE-BARBIERI:** Go ahead, Tom, and then I will speak to
39 that.

40

41 **DR. FRAZER:** All right, and so I just -- Again, listening to the
42 discussion, and so there was a motion, right, on the board to
43 provide some information on these recreational bag limits and the
44 vessel limits, and I do think that there was a quantitative
45 approach there, right, and so there's some analysis to be done,
46 and whether or not this body weighs-in and says, yes, we agree
47 with that approach, and what decision that the council might make,
48 based on those simulated outputs, I guess, that's a different

1 story.

2

3 With regard to the spatial areas to protect spawning gag, there is
4 a lot of unknowns, right, and I think that's what Sue shared, for
5 sure, and there are clearly questions about whether or not they
6 truly form aggregations, and, you know, what mechanisms, or
7 triggers, result in a transition from female to male, and, as a
8 consequence of that, right, it's really difficult to provide any
9 quantitative result, or finding, and that's okay, right, and, I
10 mean, if that's what this body says, is we reviewed the science,
11 and we understand it's complicated, and there is a lot of unknowns,
12 and, in order to get to where you want to go, you would need to
13 know this, and we don't have that, right, and so, to advance, in
14 a very aggressive way, a management measure that's focused on an
15 areal, or temporal, closure may be premature, right?

16

17 If that's the discussion that comes out of this group, that's okay,
18 you know, and everything doesn't have to be just an analysis of
19 the numbers. Your experience, and your expertise, is pretty broad
20 here, right, and somebody is telling me to shut up, and so, again,
21 I mean, it's important to summarize that input and provide it,
22 because a lot of people don't have that same expertise.

23

24 **VICE CHAIRMAN BARBIERI:** Thank you for that clarification, Tom.
25 Sue.

26

27 **DR. LOWERRE-BARBIERI:** Great point, and I'm glad you talked first.
28 Starting with the easiest question, where did the 32 percent virgin
29 male come from, that's based on age comps and what they would be
30 with no fishing and an A50 of 11.6, I believe. Now, we can confirm
31 that, but that's my understanding from where that came from.

32

33 In terms of sperm limitation, you don't need to think of it as
34 sperm limitation. I mean, I think that there's been a pretty major
35 acceptance of BOFFs, right, big old fat females, and so why would
36 we -- If you think about why you have sequential hermaphroditism,
37 it's because reproductive success is even that much more if you're
38 a male at that size, and you're basically a super BOFF, and who
39 cares whether you're actually producing sperm or eggs, but you've
40 become a super producer, right, and so I think that that's a key
41 point.

42

43 If you want to think about it in terms of just plain age truncation
44 and what we see with gag, and never think about whether they're
45 male or female, or gender neutral, we get the same result. The
46 think that is shocking is, when Skyler was doing the assessment
47 for 33, I asked her to actually look at what was maximum age at
48 MSY for the 90th quantile, and it was four, and so, if you don't

1 get any males until -- If you don't get any males until six, and
2 if you don't get many males -- If you don't get 50 percent males
3 until ten, you've got some serious problems, and so I think it
4 might make sense to just -- Instead of thinking sperm limitation,
5 because I think that's much harder for all of us to wrap our head
6 around, what that really means or how that would work, is to think
7 more about age truncation and the relative value, reproductive
8 value, as these fish are increasing in age.

9
10 In terms of the spatial closures, you know, when you get to
11 reproduction, you're talking about behavior, right, and any
12 fisherman can tell you that you will have these hotspots for gag.
13 The spot I talked about, where that fish had been captured five
14 times, and it was an undersized fish, it's a hotspot, and it's a
15 known hotspot.

16
17 We have a telemetry -- We have fish tagged there, and we track
18 fish there, and Dave -- We know have a special buoy with real time,
19 that can track chlorophyll, and so it will tell you if red tide
20 comes in, but those hotspots are known by a lot of fishermen, and
21 so, when you think about discard mortality and escapement, I think
22 that's a good point.

23
24 You know, you think about what do you need in your spawning
25 population, and you have to -- Because of the spatial ecology of
26 gag, you have to get a certain number of mature older fish out
27 there, regardless of what sex they are, and, if you have huge
28 fishing mortality on these shallower fish, you may simply just not
29 be having the recruitment that you need to the spawning population,
30 and I think, whether it's a slot size, or whether it's something
31 in terms of potentially increasing the size, the whole idea is
32 what would it take to get more fish that can successfully recruit
33 to the spawning population.

34
35 To speak to Will's points, in terms of quantification, as I
36 mentioned, we did some of that, with modeling and simulations, and
37 Claudia did that, and we're happy to share that.

38
39 **VICE CHAIRMAN BARBIERI:** Thank you, Sue. I am going to follow the
40 queue with a couple more questions, and this is a very good,
41 intense discussion that we are having here, and so let's see if we
42 can have a couple more questions, and perhaps we'll take a break,
43 right, the break that we are scheduled to take at 2:30.

44
45 **MR. RINDONE:** I am trying to characterize all of these discussions
46 and everything, and so, typically, you know, we try and beat a
47 motion out of you guys for a recommendation here, but I do want to
48 note that, you know -- I don't know how the two council members to

1 my left feel about this, but I think that there's a lot of great
2 take-aways that are kind of embedded in this discussion that don't
3 necessarily require you guys to come to some kind of consensus or
4 anything like that about a particular viewpoint.

5
6 In many cases, the conflicting viewpoints present discussion
7 topics that the council should consider, and so that's encouraged
8 here, and so I don't want you to feel, in this particular instance,
9 and don't think this is a change to the norm, that a motion is
10 necessary, and I know that I, and I'm sure the council members
11 here, also very much appreciate the spirited discussion, and so
12 please keep it up.

13
14 **VICE CHAIRMAN BARBIERI:** Right, and then, just to supplement that,
15 perhaps, if additional analysis -- Because, obviously, additional
16 analysis, if available, would be informative, right, and so, with
17 additional analysis, we can visualize what we would want, and this
18 would be the opportunity for somebody to make a motion, you know,
19 requesting that those analyses be prepared, right, for a future
20 meeting, where we could look at this in more detail, and that would
21 be sometime, depending on data availability and the possibility of
22 that analysis actually being conducted, but, if it can, I think it
23 would be helpful, and so a couple more people, and I have Jason
24 Adriance and then Trevor Moncrief and Doug Gregory.

25
26 **MR. ADRIANCE:** Thank you, Mr. Vice Chairman. Most of my points
27 were covered, and I just wanted to say, under a commercial closure
28 -- I don't know that I would necessarily take the Edges as a con
29 at 100 percent, and that's off that heavily-fished area of the Big
30 Bend, right, and maybe it is a male recruitment issue over there,
31 because of that heavy fishing pressure, and maybe they're just not
32 making it to that protected area, or there's not as much there,
33 and so I don't know if I would necessarily consider that a con
34 right off the bat, and I think there're more that should be looked
35 at over there. Thanks.

36
37 **VICE CHAIRMAN BARBIERI:** Thank you for that, Jason. Trevor.

38
39 **MR. MONCRIEF:** All right. Tom prompted it, and so I'm just going
40 to say it. I think, more often than not, when we have species in
41 trouble, and there's a lot more people here with more experience
42 than me, and have dealt with all of this before, but there's a lot
43 of times where we pile on regulations quickly on a species, and,
44 since you brought it up, I mean, I will just say it.

45
46 My take has always been that you take step-wise approaches, see
47 how the stock responds, and then start evaluating, and what was
48 just proposed in the rule that was made for this species was

1 drastic, in the terms of how it's been exploited in the past, and
2 so I would be hesitant to move forward with another regulation
3 that adds additional restrictions on this species without at least
4 giving a little bit of time to see how the stock health improves
5 over the next few years, because -- I said this in a commission
6 meeting two weeks ago, and I've said it in this room, and we don't
7 typically look at anything that's going to increase harvest or
8 decrease -- Or increase opportunity for anglers.

9
10 What we look at, and what the council decides, typically restricts
11 fishing, decreases fishing mortality, and it's nearly impossible
12 to get anything back, and so it's hard for me to sit here and think
13 about adding on another measure after a measure was just placed
14 in, because I know, in the future, we aren't going to say let's
15 think about opening that area back up, or let's, you know, talk
16 about maybe expanding that slot limit or anything else like that,
17 and so that's just my two-cents on the matter, just from what I've
18 experienced.

19
20 **VICE CHAIRMAN BARBIERI:** Okay. Thank you for those thoughts,
21 Trevor. Doug Gregory.

22
23 **MR. GREGORY:** Thank you, Mr. Chair. Trevor pretty much stole my
24 thunder, and I was going to say something similar, and I will.
25 You know, we have an eighteen-year rebuilding period, and the ACLs
26 are the mechanism for rebuilding this stock, and it's a heavy-
27 handed mechanism right now.

28
29 To me, it was comfortable, and appropriate, to look at how can we,
30 with the recreational fishery -- What can we do to make it a little
31 more palatable, but then we got to the commercial fishery, and
32 it's like what additional restriction can we put on to protect
33 this stock, and, well, I don't think, like Trevor said, additional
34 restrictions are necessary at this point.

35
36 The ACL is the heavy lifting, and, if the council can do something
37 to alleviate some of the pain that both the commercial and the
38 recreational fishery have to go through, so much the better, and
39 we've got time to adjust measures to reach our goal, which is
40 eighteen years away, and so I agree with Trevor completely on those
41 regards. Thank you.

42
43 **VICE CHAIRMAN BARBIERI:** Okay. Thank you, Doug. Josh.

44
45 **DR. KILBORN:** Thank you, and so I tend to agree with what folks
46 are saying now about the step-wise approach and not getting ahead
47 of ourselves, but one of the things that I think we should keep in
48 mind here is that this isn't just a numbers removal problem, right,

1 and this is specific to this species, where we're removing either
2 too many males, or too many transitional females, or we're just
3 not -- We don't have the right ratios in our stock, and so, by
4 just restricting the removals, using an ACL, that doesn't address
5 that underlying problem, and so I think we do still need to kind
6 of keep our thinking caps on, with respect to how to fix that.
7 Thank you.

8
9 **VICE CHAIRMAN BARBIERI:** Thank you for that, Josh, and so I would
10 say let's go ahead and take a ten-minute break, kind of chill a
11 little bit, cool the engines, refresh our coffee cups, and then
12 we're going to return at 2:50 to resume this conversation.

13
14 (Whereupon, a brief recess was taken.)

15
16 **VICE CHAIRMAN BARBIERI:** All right, folks. Let me ask SSC members
17 to return to the table. This was a big bonus, a twenty-minute
18 ten-minute break, and so we should be fully restored and refreshed
19 and ready to reengage in this discussion.

20
21 Looking at our agenda, the three points under our discussion topic
22 is for us to provide some thoughts and recommendations for reducing
23 discard mortality, a recommendation about modifications to spatial
24 management, and a recommendation about modifications to seasonal
25 management, and so those are the things that we're going to be,
26 you know, trying to either provide some additional final thoughts
27 on, or perhaps develop motions to the council, understanding what
28 Ryan mentioned, which I don't disagree with, and I don't think a
29 motion is necessary here, but we're going to have to craft our
30 report in a way that is informative to the council.

31
32 Then, in terms of additional analysis, you know, Will and Sean and
33 Doug and others have brought up, you know, the fact that we haven't
34 really seen a lot -- There are some analyses that are included
35 here, but perhaps not, you know, the number of analytical products
36 that could be helpful, more helpful, to the committee, and so maybe
37 we can have motions that request some of those analyses be put
38 together, if the data is available to put them together.

39
40 Then, Jess, I'm going to ask you to go back to Ryan's presentation
41 and put there on the board Slide 26, that table, because, here, to
42 me, it's clear, right, that the council is saying, through Ryan,
43 what we think we know, regarding the potential benefits of some of
44 these measures and some of the factors, right, that would be
45 addressed by the potential measures, and so one way for us to look
46 at this is perhaps see -- You know, can we provide some
47 recommendations that would change some of those Xs into green
48 checkmarks? Those are the core issues, right, that we will have

1 to have addressed, and then perhaps provide comments on what we
2 believe are the relative benefits of some of the checkmarks that
3 are already there, and so, in other words, put this as a way to
4 try and incite, you know, discussion there, and conversation.
5 Trevor.

6
7 **MR. MONCRIEF:** Can I get one out of the way, real quick, and I
8 don't know if everyone is going to agree with me on it, but
9 recommendation for reducing discard mortality, and we've had a
10 couple of presentations so far that have shown the discard
11 mortality is 10 percent or less, and so then the only thing we're
12 talking about is the number of discards for the inshore side, and
13 I feel like the regulations that are in place are there. I mean,
14 at that point, you're talking about reducing discards, which is
15 then seasonal structure and everything else, and that's fine, and
16 you know, we'll recover, but maybe I misread that one a little
17 bit.

18
19 **VICE CHAIRMAN BARBIERI:** Thank you for that, Trevor. Josh and
20 then Roy.

21
22 **DR. KILBORN:** I'm interested in this commercial spawning season
23 closure topic, particularly as it relates to decreasing mortality
24 on the males, and I'm wondering what we know about how that fleet
25 operates in deep water, since that's where the males presumably
26 are, and does it make any sense to try to think about that as a
27 rule, or -- Because, to my mind, we have a red "X" there, and I
28 don't really understand why, because I feel like, if we did have
29 a commercial closure during the spawning season, it would
30 necessarily reduce mortality on the males, because they wouldn't
31 be fishing in that region, and so I feel like that's something to
32 explore, because that would put it in line with another green arrow
33 right above it, or a green checkmark above it, and so, to me, it
34 feels like that's the most -- That has the most potential to be a
35 beneficial rule to look into, but I don't know if we have the data
36 to really make any recommendations or anything based on that, and
37 so I would like to know more about how that fleet operates and
38 prosecutes on gag in deep water.

39
40 **VICE CHAIRMAN BARBIERI:** Ryan, to that point?

41
42 **MR. RINDONE:** So we know a lot about how that fleet operates in
43 deep water, and we have the VMS systems, of course, on all those
44 vessels that can tell us where they're fishing and how often they
45 visit certain places, you know, frequency of depth and things like
46 that. Insofar as it relates to a spawning season closure, the
47 reason why we wouldn't expect that to result in a decrease in
48 fishing mortality on males is because they could still fish there

1 outside of the spawning season closure, and so, just because you
2 close February and March, or January through April, it doesn't
3 mean that those same fishermen could not go to that same area, or
4 depth strata or whatever it might be, outside of the spawning
5 season and conduct the exact same fishing practices, and you may
6 have effort displacement.

7
8 If they're not allowed to fish in a certain area during a certain
9 time of the year, then that just increases the effort that is
10 expended upon that area on the times of year when fishing is
11 allowed, and so that's why there is a red "X" there.

12
13 **DR. KILBORN:** Do we have the data to model, or investigate, this
14 in a quantitative way, so that we could satisfy maybe Will
15 Patterson, or myself, and --

16
17 **MR. RINDONE:** We could examine the VMS data, and we could try and
18 produce something in a general way, because of confidentiality
19 rules with those data, but in a general way to describe that, but
20 this is also something that we've talked about at the IPT level,
21 that's pretty well demonstrated through the literature, that a
22 seasonal closure, by itself, isn't going to necessarily reduce
23 overall fishing mortality, if you believe that that effort is
24 simply going to be displaced to a different part of the year when
25 fishing mortality is allowed.

26
27 It's just taking it from one time period and then moving it and
28 condensing it into others, and so -- Especially as we're thinking
29 about gag, and the low commercial quota that we have right now for
30 gag, it would not take very long at all if the commercial gag
31 fishermen in the Gulf went wide-open throttle after them, to catch
32 all of them, and I think, in the past several years, you know,
33 they were catching about 500,000 to 600,000 pounds or so, and I
34 would have to go back and look at the IFQ reports, but now it's
35 down to -- I think, this year, it's 199,000 pounds, and I think -
36 - I haven't looked at it today, but I think it was near like 90
37 percent landed, or something like that, and, basically, the people
38 that still have any quota left know that they can go catch it
39 whenever they want to at this point, and they very likely will.

40
41 There really genuinely is no expectation that closing any part of
42 the Gulf for any single part of the year is going to decrease the
43 mortality on males. The only thing that would be expected to do
44 that would be to remove fishing mortality on that area where you
45 think you would have a higher proportion of males, like was done
46 with Madison-Swanson and Steamboat Lumps, to try to increase the
47 sex ratio there.

1 **VICE CHAIRMAN BARBIERI:** Roy.

2
3 **DR. CRABTREE:** If you think about the commercial spawning season
4 closure, I suspect that the amount of gag quota available is low
5 enough that the fishermen will treat it as kind of a bycatch
6 fishery. They will be targeting other things. For example, the
7 longline vessels are out there fishing for red grouper, and they
8 will catch some gag, and it will go on the boat.

9
10 If you close it during the spawning season, they're still going to
11 be out there targeting red grouper, and they will throw the gag
12 over the side, and they are fishing in relatively deep water, and
13 so, at least in the initial years of the rebuilding plan, with the
14 low quota levels, I am not sure that a spawning season closure
15 would do much. The recreational fishery is closed anyway at that
16 time of year, and so it wouldn't affect them.

17
18 The thing, to me, that seems to be missing in this table is to be
19 looking at the timing of the recreational fishery, and when does
20 it open, and it seems, to me, that you could do a look at what
21 species most commonly co-occur in the catch with gag, and is it
22 red grouper or red snapper, and is there a way to time the opening
23 of gag with the opening of these other fisheries in a way that
24 might have some benefits, in terms of reducing discards and
25 maximizing conservation benefits, and that's something that might
26 be worth the council looking at and analyzing.

27
28 **VICE CHAIRMAN BARBIERI:** It looks like Katie Siegfried might have
29 some information on that for us.

30
31 **DR. SIEGFRIED:** Yes, and thank you, Mr. Chair. After that was
32 brought up, before the break, I looked at SEDAR 72, Data Workshop
33 Document 7, and Dr. Forestall put together a species correlation
34 analysis before an index was created, and, you know, you're right
35 on red grouper, red snapper, white grunt, cobia, gray snapper, and
36 there's a table of the association coefficients that you all can
37 take a look at and inform any policy that you need. Did I say red
38 grouper? That's number one.

39
40 **DR. CRABTREE:** So one piece of advice to the council might be, if
41 you're talking closures, whether they're temporal or spatial, you
42 might broaden the suite of species you're looking at to include
43 grouper. Otherwise, you may just be creating discards, and I know
44 that might be unpalatable to fishermen, and they may not want to
45 go there, but it would probably have a big effect on the
46 effectiveness of it.

47
48 **VICE CHAIRMAN BARBIERI:** Right. Good points, Roy. Will.

1
2 **DR. PATTERSON:** Thanks, Luiz. Josh and Roy make really good points
3 here about spatiotemporal dynamics, not only of the gag fishery,
4 but other fishes in this vast multispecies reef fish fishery on
5 the West Florida Shelf, that it makes trying to evaluate this,
6 based on intuition, really difficult, right, because you squeeze
7 the system in one spot, and you don't know where it's going to pop
8 out in another, and the dynamic between the red grouper longline
9 fishery and gag is a perfect example.

10
11 We can suppose what that might look like, but we don't have -- You
12 know, without actual analysis to look at the spatiotemporal
13 dynamics of the fishery, we don't have a way to really fully
14 estimate that.

15
16 One other point. You know, when Madison-Swanson first was put in
17 place, there -- You know, there was an uptick in the estimate of
18 the percent males, and then it plateaued, and then it declined,
19 and I remember Felicia Coleman and Chris Koenig documenting, or
20 showing, evidence of poaching that was occurring within the MPA,
21 and I don't really know all the various aspects of enforcement of
22 these area closures, and some that are just seasonal and not fully
23 around the year, but is there any information about how successful
24 the closures are actually being enforced in recent years, and how
25 problematic is that particular issue?

26
27 **VICE CHAIRMAN BARBIERI:** Thanks for that, Will. Ryan has some
28 information here that he can share with us on this.

29
30 **MR. RINDONE:** Thank you. Despite FWC having the second-largest
31 navy in the world, the MPAs are just very remote, compared to where
32 the population centers are, and so getting vessels out there to
33 cover these several-hundred-square-mile areas is, obviously, a
34 challenge, and, even when you do have vessels out there are able
35 to patrol those areas for compliance, the other vessels that may
36 be out there poaching, if they're capable of being out there, are
37 often properly equipped to be out there as well, which means they
38 saw you coming fifteen miles ago, and so they've already either
39 already started moving, or they're out of the reserve, or what
40 have you, and, when you're talking vessels with three and four
41 outboards, they can scoot.

42
43 Enforcement is definitely a problem in the reserves, and that was
44 one of the reasons why, and in an effort to decrease confusion
45 about it anyway, and to reinforce the intention of the existence
46 for Madison-Swanson and Steamboat Lumps, the council had completed
47 an action that prohibited all fishing, full stop, in Madison-
48 Swanson and Steamboat Lumps, and sent a letter to NMFS Atlantic

1 HMS Branch to do the same for HMS species, and NMFS Atlantic HMS
2 has not yet implemented commensurate regulations to that effect,
3 but, if and when they do, there won't be a reason for anyone, for
4 any reason, to have a line in the water in those MPAs, which will
5 ease the burden of enforcement and help reinforce the purpose for
6 those MPAs in the first place.

7
8 Any time we're talking about any area that's that remote and that
9 removed, there's only a few vessels in FWC's fleet that have the
10 ability to consistently operate at those distances from shore for
11 extended periods of time, and the same is true for NMFS, and it's
12 just a -- It's a resource problem.

13
14 **DR. PATTERSON:** Can I follow-up, Luiz?

15
16 **VICE CHAIRMAN BARBIERI:** Yes, please, Will.

17
18 **DR. PATTERSON:** If there's no, in a practical sense no,
19 enforcement, then creating the MPA is just simply telling people
20 where the really big fish are.

21
22 **VICE CHAIRMAN BARBIERI:** There are lots of nods here in the room,
23 Will, and lots of people agreeing with that point. Dave Chagaris.

24
25 **DR. CHAGARIS:** So, I mean, I've been listening to the discussion
26 mostly, and, you know, these three options on the board here -- I
27 mean, one, you know, we've talked a lot about the commercial
28 fishery, but it's really a small fraction of the fishing mortality,
29 and so, you know, we might not want to spend a whole lot of effort.
30 Even if you shut the commercial fishery down, you might still be
31 overfishing, and so, you know, we probably want to focus efforts
32 on what we can do with the recreational sector, and I feel like,
33 you know, the vessel limit is just kind of another flavor of a bag
34 limit, in some ways.

35
36 You know, we've done bag limits in the past, and they haven't
37 really been effective, and so I think what we have to do is, you
38 know, try to think outside the box here, I mean, slot limits,
39 management on escapement, effort restrictions, you know, things
40 that we haven't tried in the past, because I'm not convinced that
41 any of these will work. We saw some analysis there, but those
42 analyses -- You know, they have some assumptions underlying them,
43 you know, one, that the effort is constant, and the stock isn't
44 growing or shrinking, and so, you know, we kind of have to take
45 them, you know, at the surface there, but those are just kind of
46 my thoughts on that and this whole discussion here.

47
48 You know, the commercial -- Anything we do to the commercial sector

1 probably isn't going to meet the management objectives, and, you
2 know, small changes to the bag limit probably also aren't going to
3 meet the management objectives, and so we kind of need to think
4 more seasonal effort restrictions and things like that.

5
6 **VICE CHAIRMAN BARBIERI:** Thank you, Dave, and I tend to agree with
7 you there, right, and, I mean, I was looking at that table and
8 thinking, you know, if the things that we are considering now --
9 If we say, okay, the patient is sick, right, and so we are trying
10 to find what is the medicine that we can provide that will actually
11 address the problem and get this patient in better health, and I
12 feel that --

13
14 You know, the recreational season duration there, you know, the
15 issue of the recreational season, is iffy, right, because we don't
16 have that much control about the amount of fishing effort that is
17 going to happen, right, and we don't have the ability to close the
18 tap, or the tap is running, and we have to close the tap at the
19 right time, before the bucket goes over the top, right, but we
20 can't do this, because we cannot really be doing in-season
21 management effectively within a, I don't know, a thirty-day, and
22 very high catch rates, and so I agree with you that I have very
23 little faith that just having a short season in the fall is going
24 to actually decrease that recreational take. I think that it's
25 likely that they are going to go over.

26
27 Then a couple of things here, and it's like that, of course,
28 doesn't address discards at all, and that may be an intractable
29 problem, right, that we're not going to be able to resolve, and so
30 we're going to have to basically think about solutions that already
31 account for us not being able to control discards, right, because
32 it's intractable. I have Trevor and then Steve Sauls.

33
34 **MR. MONCRIEF:** All right. I really didn't want to bring it up
35 today, but I'm just going to mention it, to just mention it. More
36 often than not, when we get into these situations, when we start
37 constraining season limits and everything else, we start to
38 increase uncertainty in our landings estimates, which bring about
39 this negative feedback loop that just continues to spiral down to
40 shorter and shorter and shorter seasons, until we get to the point
41 where we're just in a spot where there is no return.

42
43 My initial thought though is that I don't find it necessary for us
44 to add on additional restrictions when it's -- How do I put this?
45 It seems like we're tacking on additional discussing the potential
46 of recommending additional punitive restrictions on a scenario in
47 which the fishermen don't really have a control over, and the issue
48 is how we come up with season lengths and what the corresponding

1 harvest is and everything else like that, and I feel like, you
2 know, the management measures that's been made thus far is
3 appropriate, and these additional measures just seem like it's --
4 Like it's not the time, and the recommendation just isn't there,
5 in my mind.

6
7 **VICE CHAIRMAN BARBIERI:** No, and I hear you, and I think that, you
8 know, it's -- I don't know how much consensus there is on that,
9 but I think that's a valid point, that it's a valid opinion, and,
10 you know, we can go from there, and it definitely is going to be
11 in our report, and there is some sentiment within the committee
12 that just proceeding as we are now has a fair likelihood, right,
13 of rebuilding the stock within the expected rebuilding timelines
14 and that, you know, things will be good. Steve.

15
16 **DR. SAULS:** Thank you, Mr. Chair. To try and -- I guess, as I'm
17 thinking about this, and as we're having discussion to advance our
18 conversation forward, and be as useful as we can to the council,
19 given the limitations and information that we had, and, at the
20 same time, given the information that was presented this morning,
21 and our collective experience in the room with -- You know, with
22 fish biology and of policy development and fisher behavior, et
23 cetera, and I wonder if a useful approach would be to try and rank,
24 you know, in a sense -- To develop some sort of informed ranking
25 of the possible -- Of these sort of possible policies that the
26 council is considering, with attaching to those rankings sort of
27 the rationale, right, and so, you know, we would first recommend
28 this, and then we -- You know, in sort of a list fashion, from
29 what we feel would be the most -- That would provide the most bang
30 for our buck, so to speak, or utility.

31
32 As you said, you know, earlier, Luiz, if we have a sick patient,
33 what are the triage approaches that would fit that patient, and,
34 well, not every sick patient gets -- You know, there are different
35 considerations, right? If someone is bleeding out, you give them
36 stitches. If they are having a heart attack, you do something
37 else, whatever, and so, here, given the complexities in life
38 history, given the wealth of information that was presented this
39 morning, and given the fact that this animal is having trouble
40 rebuilding, for whatever reason, and probably a variety of all
41 these reasons we're discussing, I wonder if that might be a way
42 forward, or a way to sort of formalize our discussion in a way
43 that can be useful for the council.

44
45 **VICE CHAIRMAN BARBIERI:** That sounds like a really good idea, to
46 me, and I feel that that would be very helpful, because then, you
47 know, instead of eliminating some of those, I mean, we just rank
48 them, and we say, you know, those are what we believe, based on

1 our collective professional judgment, are more likely to achieve
2 the goals that you are -- You know, it's not deterministic either,
3 right, because then we can assign, you know, some probability of
4 not actually meeting the goals as well, and so --

5
6 **MR. RINDONE:** When we're thinking about the kinds of information
7 that you have available to you, there are certain things that we're
8 just not going to have, like the actual reality of what catch and
9 effort looks like on a daily or wave-based -- A wave basis,
10 starting with a September 1 start date.

11
12 We just started that this year, and so there's no reason to expect
13 anything, based on the effect of a September 1 start date, is going
14 to be able to be reliably produced for analysis until later, and,
15 even then, we'll have an N of one fishing season, and, typically,
16 when we change regulations like this, and we can see these effects
17 in the data, there's a burn-in period of a year or two, as the
18 fishing public gets used to a new regulations and adapts to it.

19
20 With respect to the actual number of discards, you know, those of
21 you that are heavily involved in the SEDAR process know that that's
22 a very uncertain portion of the assessment, and sometimes it's
23 like throwing a dart, and so -- The estimates of discards vary
24 greatly between some of these data units, like between FES and
25 between SRFS, never mind the recent pilot study that was released
26 about FES, and so they still vary quite a bit, and especially for
27 things like the shore mode, and there is a decent shore component
28 for gag, and so just some -- Just some gaps, and I know that
29 there's been some discussion about like we don't have all the data
30 that we need to look at it, and, in some cases, we're just not
31 going to be able to provide that to you in a timely fashion, or
32 you know how uncertain it is already.

33
34 **VICE CHAIRMAN BARBIERI:** Thank you, Ryan. Steven Scyphers.

35
36 **DR. SCYPHERS:** Thank you, Mr. Chair. Ryan actually answered part
37 of what I was going to ask, and it was, in one of the parts of the
38 presentation, he mentioned that there's already been some response
39 by the commercial fishery shifting effort, perhaps and adapting to
40 the current management environment, and so my question there was
41 going to be when could we expect to see some information, and what
42 would that look like, characterizing that type of shift, and is
43 that something we might see next year, or is that two years away,
44 and then I have a related one, but I will let you go ahead.

45
46 **MR. RINDONE:** So, in thinking about how I would answer that, I
47 think that it would be something we could look at next year, and
48 generalizing the spatial distribution of effort via the VMS data,

1 to show -- Maybe do that like over time blocks, like over one or
2 two-month time blocks, or something like that, to show where those
3 VMS pings, in a relative sense, were coming in, compared to
4 previous years, and then we could use that to decide whether we
5 felt like effort had shifted in such a way, but what I was
6 communicating to you guys was what was communicated to me from the
7 fishermen about this idea of, you know, self-imposed trip limits
8 to try to stretch the quotas and actively fishing in areas where
9 they know that they have a lower probability of interacting with
10 gag.

11
12 The feedback we got from them was that they expect the stock to
13 rebuild, and there are a lot of fishermen that think that the stock
14 is healthier now than the stock assessment, which, again, we need
15 to remember has a terminal year of 2019, and not today, and it's
16 2019, and it had said where things were at, and so they think that
17 things have improved, and they also don't want to interfere with
18 them continuing to improve.

19
20 **DR. SCYPHERS:** Thank you. That's helpful, and, personally, I think
21 that's important, to think about, you know, the effectiveness, or
22 the impacts, of any type of recommendation, based upon a spatial
23 or temporal change, and so understanding what shifts have already
24 happened in the very recent past.

25
26 A related question that is -- So, in the specific prompts that we
27 got in the statement of task in the presentation, they were fairly
28 narrowly focused in reducing catch or reducing bycatch, or
29 discards, but, in your presentation, I actually liked how you went
30 ahead and make some comments on social and economic-type outcomes
31 that could occur, and so my question was, is that something that
32 we're being asked to comment on, on what types of impacts there
33 could be, and potentially what types of data there might be to
34 support that, because, from David Griffith's early comments, I
35 think those are things that there is some experience in this group,
36 and possibly some datasets available, to think about how, you know,
37 these three options even may have different impacts on, you know,
38 sustaining participation or those types of things.

39
40 **MR. RINDONE:** Yes, absolutely, and Dr. Griffith's comment about
41 the replaceability of gag as a grouper offering, and its
42 interchangeability, at least on a dinner plate in a restaurant,
43 with red grouper and scamp, and perhaps other species as well --
44 I mean, we know that to definitely be a thing.

45
46 You know, the proportion of people who are likely to request a
47 very specific grouper species is certainly going to be less than
48 the mean, but comments like that are important for the council to

1 remember as they're looking at very reduced catch limits for a
2 particular species, despite how popular that particular species
3 might be, and other factors as well, from the social and economic
4 sciences, that would relate to how the council might respond to
5 its use of these measures, would be welcome.

6
7 **VICE CHAIRMAN BARBIERI:** Thank you for that. Okay. I'm going to
8 then allow Doug and Will to ask a couple of questions, or make
9 additional comments, and then I would like to hear from our council
10 representatives in the room, or perhaps online, on whether they
11 feel that we have, you know, really discussed this issue enough
12 and provided enough options, or information, right, regarding your
13 decisions going forward on options being considered, and then we
14 go from there. Doug.

15
16 **MR. GREGORY:** Thank you, Mr. Chair. Again, if I heard Ryan
17 correctly in the beginning, the current ACL is an 80 percent
18 reduction from the previous year's ACL, and is that correct?

19
20 **MR. RINDONE:** Approximately, yes.

21
22 **MR. GREGORY:** Okay, and so that's equivalent to about an 80 percent
23 reduction in fishing mortality in this first year, and that is
24 significant. Nothing else is going to reduce fishing mortality,
25 or the impact on this population, even closely with what the ACL
26 is going to be, and so, again, anything the council can do to
27 alleviate some of the pain is fine, because it's picking at the
28 margins, in economic terms, at the margins, and it's not really
29 going to affect the rebuilding substantially.

30
31 Now, we may get ourselves in a situation where the discard
32 mortality becomes dominant and prevents something from being
33 recovered down the road, but that's down the road, and I do get
34 the impression some people are fearful of that now, but that's
35 something that will develop, and we'll have to deal with it if we
36 can't, and it's not like this population was heavily restricted
37 prior to now, because, in the assessment in 2014, it concluded the
38 population was healthy.

39
40 This whole big change is the result of SEDAR 72, and it's beginning
41 now, and so I am comfortable that the ACLs are going to do the
42 heavy lifting, and, if we can alleviate some pain somehow, fine,
43 but I don't see the need, as some other people have said, of
44 additional restrictive measures to rebuild this population,
45 because, if we reduce fishing mortality in both sectors, that's
46 going to hit the babies, the middle-aged animals, and the older
47 animals. They're all going to be getting substantial protection.
48 Thank you.

1
2 **VICE CHAIRMAN BARBIERI:** Thank you for those thoughts, Doug. Will.

3
4 **DR. PATTERSON:** Thank you, Luiz. I just want to go back to
5 something that --

6
7 **VICE CHAIRMAN BARBIERI:** We saved the best for last. Will is going
8 to be the last word on this topic.

9
10 **DR. PATTERSON:** So somebody must be coming after me then. You
11 know, going back to something that Dave Chagaris said a little
12 while ago about, you know, looking at the portfolio of management
13 alternatives and devices that are available to the council, it
14 seems, to me, that it would be really important to look at, you
15 know, what the potential results, or effectiveness, of exploring
16 any of those might be, right, and so you have a series of knobs
17 that the council can turn to try to decrease removals in this
18 fishery.

19
20 As Dave pointed out, you know, the commercial harvest not only is
21 it managed under an IFQ system, where you have a near-census of
22 the catch, but the discarding is a much, much lower magnitude than
23 what we see in the recreational fishery, and the current allocation
24 is 35 percent/65 percent, right, and so, if the recreational
25 allocation is 65 percent, but a big chunk of the catch actually is
26 discarded, and so Bev Sauls showed us that only about 10 percent
27 of the gag catch is landed, and the rest goes back into the sea of
28 discards.

29
30 Angela's data showed about a 10 percent, estimated 10 percent,
31 release mortality rate, if everybody is venting and using descender
32 devices, and the last SEDAR, SEDAR 72, used a 12 percent discard
33 mortality rate for the recreational fishery, and, if it's 12
34 percent, then that actually means that, of the total kill in the
35 fishery, 80 percent of it is from the recreational fishery, and a
36 little less than 20 percent comes from the commercial fishery.

37
38 The discard issue clearly is what's driving the bus here, and we
39 just don't seem to have a great idea of what the spatiotemporal
40 dynamics of this fishery, versus other species that are targeted
41 in the multispecies fishery might be, and then we've also talked
42 about enforcement. You know, we could do everything in our power
43 to try to increase the number of males that are recruiting to this
44 offshore population, but some areas that we know are spawning
45 areas, and maybe not spawning aggregation sites, like we once
46 thought, according to Sue, but, if they're known spawning areas,
47 but we're not protecting them throughout the year, then, you know,
48 Sue's data showed that there is a really low incidence of males

1 that exist in those areas.

2
3 Even if it's higher in Madison-Swanson, still, if we're not
4 actually enforcing the closure, the spatial closure, then it's --
5 You know, it's basically just indicating where to go to catch big
6 fish, if you're of the mind of I'm just going to go catch big fish,
7 regardless of what the regulations say I can and can't do, and so,
8 you know, the council, I think, needs to advocate for a remote-
9 sensing capability to quantify the spatial and temporal dynamics
10 of the recreational fleet in particular.

11
12 You know, we have VMS in the commercial fleets, but to have remote-
13 sensing capabilities to be able to map out where the fishing is
14 happening, use it as an enforcement tool in areas that have spatial
15 closure, but to get a real sense of what the magnitude of
16 recreational effort is, so that we can get around some of these
17 great issues of uncertainty, but also what's estimated to be the
18 most substantial removals, you know, the fishery that's causing
19 the most substantial removals, whether they're landed or go back
20 into the sea as live discards, with some percentage of those
21 animals dying. I mean, we really want to look at how to -- You
22 know, what knob to turn to have the most impact, and that's the
23 knob.

24
25 **VICE CHAIRMAN BARBIERI:** Thank you, Will, and I see council member
26 Ed Walker there on the queue. Hi, Ed, and we definitely want to
27 let you address the committee, but, before we get to that point,
28 I just want to go to the two council members here and get some
29 comments from you regarding the -- You know, the discussion that
30 was had this afternoon and the degree of information that you
31 believe you have received, or guidance, recommendations, from the
32 committee, in terms of, you know, what you intend to do in
33 Amendment 56.

34
35 **DR. FRAZER:** Okay. I am going to let C.J. talk to most of that,
36 but I want to address Will's point, actually. I mean, I think
37 he's exactly right. I mean, at some point, you know, it's 2023,
38 and the technology is going to have to allow us to assess effort
39 remotely on a relatively large spatial scale, and, Will, that
40 suggestion has been made, right, and so don't feel like it hasn't
41 been made, and it just hasn't been incorporated into the plan,
42 and, you know, I'm looking at Trevor right now, and I know, because
43 I made it, and then the other part of your question is an important
44 one, too.

45
46 I mean, Dave made some good points about, you know, we're moving
47 around the edges, and you kind of reemphasized that, but, at the
48 end of the day, we have an effort problem, and a discard problem,

1 as a consequence, and those are certainly big challenges, and a
2 lot of them are not -- I mean, they're tied to values, right, but
3 there's also a lot of math that goes into that, a lot of science
4 that goes into that, and so I do look forward to at least listing
5 of things, and how the SSC might feel about the effectiveness of
6 those various measures, and we haven't seen that yet, right, and
7 so it's hard to map, but I was appreciative of that approach that
8 Steve brought up, and so, anyway, C.J.

9
10 **DR. SWEETMAN:** To the question from our Chair here, good
11 discussion, and I appreciate all the points that people have been
12 bringing up here, and so we, obviously, have a lot of kind of
13 different moving pieces, and we kind of highlighted some of the
14 objectives that the council was looking to try and accomplish,
15 some of the goals with potentially some of these management options
16 here, and they're not necessarily directly linear.

17
18 You know, you have some things that are about constraining future
19 harvest to the ACL, which is what I've talked about, and we've
20 talked about avoiding discards, and it's not necessarily a one-
21 size action fits everything here, that's going to resolve
22 everything, and I think, from my perspective maybe -- Like I said,
23 I appreciate the discussion so far, and I kind of like what Dr.
24 Saul recommended earlier, about potentially some sort of ranking
25 system, if you will, something that gives us the best bang for our
26 buck here, so to speak, in terms of savings for gag grouper, and,
27 like I said, I mean, some of this, and what we're talking about
28 here, is -- Obviously, some of these are going to be council
29 decisions, you know, but we really -- At least I, and I think we
30 all, really, respect you guys' opinion here and the technical
31 advice that you would give us along these lines here, but,
32 specifically, for what we're dealing with, one of my main concerns
33 this year is, you know, we're acting --

34
35 We don't know how effort is fully going to shift this year, and
36 we, obviously, drastically reduced the catch limit, and I
37 understand what Trevor was saying there about let that play out
38 and see what that gives us there, and some of my concern, and some
39 of others from the council, is that the catch limit is so low that
40 we do not know how that effort is going to shift, and, ultimately,
41 how that will translate into landings in this given year, and we've
42 got a little bit of conservancy, I guess, if you will, and some of
43 these potential smaller management actions could potentially have
44 us not exceed the catch limit and then have paybacks next year.

45
46 Like I said, again, that's a council, you know, discussion that
47 we'll ultimately have, but, for some of the options that we have
48 on the table here, these could help with that, and I understand

1 that some of these, you know, we don't have fully quantifiable
2 analyses, and some of these are more qualitative, and we did have
3 some that we were shown here, but, from the perspective of the
4 SSC, I think I would at least like to see what you all think would
5 be the most effective along these lines, and if, ultimately, you
6 say that none of these are going to be effective, I think that's
7 important for the council to consider, too.

8
9 **VICE CHAIRMAN BARBIERI:** Thank you for that, C.J, and, before I go
10 to Ed, can you just clarify, in terms of accountability measures,
11 right, because one option is to basically trust that what we have
12 proposed is going to achieve, right, the goal, but, if it doesn't,
13 then we can look at this as like a risk analysis, right, and so
14 what are the consequences associated with us, you know, basically
15 saying, well, it's early in the process, and, if we go over by a
16 lot, we adjust -- You know, do some course correction later on,
17 and so what are the accountability measures that are associated
18 with this?

19
20 **DR. SWEETMAN:** It's a pound-for-pound payback.

21
22 **MR. RINDONE:** So, for every pound the ACL is exceeded in a given
23 year, in the following year, that much is -- The ACL is decreased
24 by that much, and, by a function of the way that it's decremented,
25 so is the ACT.

26
27 **VICE CHAIRMAN BARBIERI:** Right, and I wanted to bring this up,
28 because, obviously, this is an important component of this
29 conversation, right, and, I mean, we've talked about it, and I
30 know that, throughout the process of SEDAR 72, and us reviewing
31 that assessment and providing our management advice, that we were
32 very intentional in working with the council in not having this
33 fishery be reduced to the point of having to be closed, right, and
34 so we are looking for ways to provide rebuilding of this stock in
35 a way that doesn't cause a fishery closure, and so I think that a
36 lot of these conversations, right, that we are having here are
37 related to that point, right, and I think that we have to take
38 that into account, that, if we want to keep the fishery open, this
39 is going to have to be a point.

40
41 **DR. CRABTREE:** A question, for I guess Ryan, and so we have an ACL
42 and an ACT, and is the council setting the recreational season to
43 achieve the ACT or the ACL?

44
45 **MR. RINDONE:** The ACT.

46
47 **DR. CRABTREE:** Thank you.

1 **VICE CHAIRMAN BARBIERI:** For the accountability measures and the
2 payback --

3
4 **MR. RINDONE:** It's still based on the ACL, and so it's an insurance
5 buffer, and so, you know, your ABC is decremented from the OFL,
6 based on scientific uncertainty, and your ACL is supposed to be
7 decremented from the ABC based on the management uncertainty, but,
8 if there are other factors in addition that you want to consider,
9 you know, pace and precision of quota monitoring, then you could
10 have another limit, which is by way of the ACT, and so, by setting
11 things based on the ACT, it helps account for the fact that we
12 expect this -- The initial fishing season to open and close in a
13 very short window, with a limited opportunity for adjustment to
14 the quota monitoring.

15
16 **VICE CHAIRMAN BARBIERI:** Okay. Ed, thank you for waiting patiently
17 there in the background. If your microphone is working --

18
19 **MR. ED WALKER:** Can you hear me?

20
21 **VICE CHAIRMAN BARBIERI:** Yes, we can.

22
23 **MR. WALKER:** Great. Thank you, Mr. Chair, or Vice Chair, and I
24 would like to start out by saying that this has been a great gag
25 discussion, and I think you have all the top minds in gag, and all
26 the best information here, and I've been involved with a lot of
27 it, and I think you guys have all the best information available
28 in front of you, and I have enjoyed listening to the conversation.

29
30 My overall read is -- You know, I recognize that this is the SSC
31 and not an open council meeting, but, to me, the impact on the
32 fishermen is not really being considered here, and, you know, maybe
33 that's not the task of this committee, and I'm not sure, but I
34 just wanted to kind of put that out there, particularly the
35 commercial spawning season closure, and you mentioned this effect
36 and that effect and what gains you might get and whatnot, and zero
37 mention, except I was happy to see Trevor step up and mention that,
38 hey, you know, there's some fishermen involved here that are going
39 to be impacted, which isn't -- You know, IFQ fishermen, who were
40 handed this program early on, who are going to be greatly impacted
41 by this, and so, you know, perhaps that should be part of the
42 conversation when discussing this, which it will, going forward.

43
44 You know, I've heard discussion today on, you know, maybe we should
45 look at transitionals, nearshore transitionals, and maybe area
46 closures, deepwater spawning closures, or maybe pre-spawn shallow-
47 water closures, so more females can make it out to the deep side,
48 and protecting larger fish on the deep side, and protecting smaller

1 fish on the inside, and so lots of closure talk here, and, you
2 know, if there was some recreational folks in the room, they would
3 be pointing out that, you know, they've been hit with an 80 percent
4 reduction already, which is a lot, and it has wiped out, you know,
5 people like me's charter season, which was important, and we've
6 dealt with it.

7
8 We're going to power through, for the betterment of the fishery,
9 but I kind of agree with Doug Gregory that, you know, maybe we
10 should just kind of let this play out with what we have now, rather
11 than, you know, dicing it up further and further. I can tell you,
12 from the field, that it appears there has been a great recruitment
13 this year.

14
15 The flats fishermen that I know are catching, some of them, dozens
16 of very juvenile gags, and, myself, I have caught lots, and so I
17 would guess that you're going to find a big recruitment this year,
18 and, also, I've always been of the opinion, as a gag fishermen in
19 the commercial, recreational, and charter industry, that the gag
20 assessment was -- It made it appear a little bit worse than it
21 was, and I still believe that, and so, personally, I appreciate
22 all the conversation, but I would like to kind of see if what we've
23 put in place now, how it plays out and what kind of benefits we
24 get from that, and, while considering all the discussions we've
25 had today, I don't know that the SSC should put forward a motion,
26 because, as a new council member, I can tell you that SSC
27 recommendations carry a lot of weight, and particularly on
28 something like gag that's a Florida fish, primarily.

29
30 You know, the guys in Louisiana are going to, you know, put a lot
31 of weight on what the SSC says about the gag grouper fishery, that
32 they probably don't know as much about as we do, and so, if the
33 SSC does put up a motion and recommend one of these directions,
34 it's going to carry a lot of weight, and what I've seen here today
35 -- I think it's been a great discussion, but I don't know that
36 anything that I've heard comes out as something we definitely need
37 to press for or recommend forward, and so that's just listening in
38 while I'm on vacation, and I appreciate the opportunity to talk.

39
40 **VICE CHAIRMAN BARBIERI:** Sure thing, Ed. Thank you for weighing-
41 in and providing that perspective. We're going to leave the core
42 of the actual management decisions, and the more in-depth, you
43 know, social impacts of potential management actions for the
44 council to discuss as they integrate this, and, whatever way they
45 decide to proceed as a council, we respect those decisions.

46
47 I mean, as a committee, we're just trying to be responsive to our
48 council, who asked us to weigh-in, right, on providing some advice,

1 scientific advice, to management, based on some of those, you know,
2 factors that impact these potential regulations, and so I think
3 we've had good discussion, and I see that Steve Saul's suggestion
4 for ranked -- You know, a risk-assessment-type sort of framework
5 process, and, you know, we can do this perhaps if we have some
6 time tomorrow, and even as we prepare our report, right, and I
7 think we can create a table where we rank those options. Tom,
8 please.

9
10 **DR. FRAZER:** Sorry, and I just -- I mean, this may be a personal,
11 and I'm not asking on behalf of the council, and I'm asking on
12 behalf of a council member, and so we know that we have an
13 abbreviated gag season, and what I understand, based on this
14 conversation, is that there's a high likelihood of exceeding the
15 quota during that very restricted season.

16
17 In order to weigh some options not to do that, and to force us,
18 you know, into an accountability action, I would like to know,
19 from the group, how -- You know, what is the likelihood of
20 exceeding that catch, you know, or the quota, in whatever season
21 length it is, eighty-one days or something like that, and so, if
22 there's a really high likelihood, maybe we want to adjust, for
23 example, the ACT or something, but I didn't hear any of that, and
24 I'm not sure if folks can weigh-in on that.

25
26 **VICE CHAIRMAN BARBIERI:** Well, I mean the thing is that, right
27 now, right, we don't have that kind of analysis, which I think
28 that wouldn't be difficult to do, to be done, right, and I think
29 that something to that effect, Ryan, was done to inform the seasons
30 that have been proposed in Amendment 56, right, I mean, some
31 expected catch rate, daily catch rates, that would translate, and
32 how many days can the season have.

33
34 **MR. RINDONE:** Yes, and, I mean, it was based on the June 1 -- The
35 effort that we had from the traditional June 1 start date, and so
36 there were essentially two scenarios. You know, if you just assume
37 that whatever the catch and effort was like when the season opened
38 traditionally in June, that that's what it would be for September,
39 that was one scenario, and then the other scenario was that,
40 whatever the effort was observed to have been in September, during
41 a June 1 start, that that's the exact same as it would be if the
42 season opened in September.

43
44 Now, we expect some amount of effort shifting, but, again, we've
45 never done this, and so we don't have, you know, a direct example
46 to go off of for gag, and so it is a lot of postulating about, you
47 know, what we would have ultimately ended up with, and so, again,
48 we expect some amount of effort shifting, but it's hard to know

1 exactly how much.

2

3 **VICE CHAIRMAN BARBIERI:** Right. Trevor.

4

5 **MR. MONCRIEF:** So the problem that we bring in when this happens,
6 right, and I will use greater amberjack as an example, and it's a
7 very loose example, but, as you start to divide out seasons, and
8 you have things that could be targeted solely during specified
9 times of the year, you've got a lot more people listing them as
10 their primary and secondary target, which has no impact on the
11 estimate, but it's just the case of it, right, and you've got more
12 people that are going to go out in a certain time period, because
13 they haven't had access to them all year, and so they're going to
14 target this species.

15

16 If they are targeting them across their entire span, right, from
17 nearshore to offshore, all of that, and you have effort allocated
18 to those areas, that's going to be higher than what you would have
19 expected in previous times, and, because they're targeting that
20 species specifically, they're going to have a higher catch of them,
21 or the probability of success, which is then going to increase
22 their CPUE, and so you're going to have effort that's going to be
23 more allocated to the offshore area, because they're doing it, and
24 the catch is going to be -- Not artificially higher, but it's just
25 going to be higher for those individuals surveyed there, and so
26 can you say, with certainty, that it's going to stay under?
27 Absolutely not.

28

29 Can I say with certainty that it's going to go over? Absolutely
30 not, but we absolutely have increased that likelihood of a lot
31 more uncertainty happening, because that season is getting
32 constrained, and that happened with amberjack.

33

34 **DR. FRAZER:** To that point though, right, and so, emphatically, we
35 absolutely can say that we've increased the likelihood of that
36 happening, and all I'm asking is absolutely, you know, by what
37 probability, right, because, without that information, Trevor, I
38 have a hard time saying, hmm, should I use that information to
39 provide a little bit of a buffer or not, right, and that's what
40 I'm looking for.

41

42 **MR. MONCRIEF:** Yes, and, I mean, to me, it was absolutely you were
43 going to be throwing in additional uncertainty into the mix, right,
44 and you could -- I mean, it absolutely could go to the point where
45 you send out the effort surveys, and that effort actually goes
46 down, because folks are tired of the regulations, and they just
47 stay home, and so your catch could go down, but, in the instance
48 that effort stays the same, or increases slightly, you are going

1 to have the part where more of that effort is going to be allocated
2 to the offshore area and the areas which they're targeting, and
3 more of that catch is going to be gag, unfortunately more gag,
4 because they're targeting them out, and so it's just -- It's hard
5 to say whether that constitutes the need for, all right, let's
6 increase the buffer or anything else like that. That's you all's
7 decision to make and discussion to have, but I think you've got to
8 see it play out before you start going down that route.

9
10 **DR. FRAZER:** But, in your listing of things and potential options,
11 right, I mean, is there -- Do you have high confidence in this is
12 something that you should look at, medium confidence, or low
13 confidence, and, I mean, even at that level, it would be helpful
14 for me, right?

15
16 **VICE CHAIRMAN BARBIERI:** Right, and, I mean, obviously, we know
17 that we have plenty of -- If we're talking the analogy of a Bayesian
18 framework, right, we have a prior that's very well informed here
19 to generate our distribution that we know that recreational effort,
20 you know, controls, right, and recreational effort is very
21 difficult to achieve, especially in a species, stock, that is
22 dominated by discards, where 90 percent of the catch is discards,
23 and so regulations do not actually, or none that we are proposing,
24 really control for any of that.

25
26 Now, add to that that this is a very short season, right, and that
27 we're not going to be able to do a very tight job at monitoring
28 in-season to close that spigot when we're getting close, right,
29 and, I mean, I don't know, Bev, if we can develop a projection
30 model, you know, like we have for red snapper, but even that takes
31 a while to build, right, and to inform, and it would not be
32 providing that information in-season, to allow us to close, right,
33 and do we have plenty of examples.

34
35 I mean, those are just facts. They just are, and let's see how
36 many times, with all these other species, that the recreational
37 sector has gone over, and so, I mean, we're not making this up,
38 right, and, I mean, it's simply a fact, and so, to me, there is a
39 very low likelihood that we're going to be able to stay within the
40 quota, and it may happen, and I'm not saying it's impossible, but
41 I just don't think it is very likely. To go to your greater
42 amberjack example, right, how long did it take for us to achieve
43 that rebuilding target?

44
45 **MR. RINDONE:** TBD.

46
47 **VICE CHAIRMAN BARBIERI:** TBD, right, and so we have never been
48 able to rebuild that stock, despite all the regulatory actions

1 that this council has taken for how many decades, right, and so,
2 I mean, we have case studies demonstrated, and these are just facts
3 that show, right, that some of these traditional fisheries
4 management regulations, especially for species that are dominated
5 by the recreational sector, and have a high proportion of discards,
6 are very difficult to control.

7
8 You know, I am not saying this in any way, Trevor, other than to
9 Tom's question, right, Tom's question about, you know, what's the
10 probability, and how do we feel, and I would like to hear from
11 other committee members, if somebody disagrees, and by all means,
12 you know, bring it up, but, based on my own personal experience in
13 looking at this over decades, I have to say that my expectation is
14 that we're not going to be able to constrain effort and that we're
15 going to go over the quota, and it's likely to go over the ACL,
16 much less the ACT, and that's just my personal assessment, you
17 know, qualitative in nature, but based on experience in dealing
18 with recreational fisheries in the Gulf over decades.

19
20 **MR. MONCRIEF:** One more, and then anyone else can say something,
21 and the difference that happened here is that, rather than
22 amberjack being open across half waves and full waves, the decision
23 was made to start on September 1, which is the beginning of a wave,
24 and like you are going to monthly estimates and everything else,
25 and so there is that benefit that you're not going to potentially
26 have, you know, some situation where a larger than appropriate
27 amount of effort is geared toward a given species, and,
28 essentially, you're not going to have a two-month estimate off a
29 one-month season kind of deal.

30
31 That seems to be the right direction, when it comes to that, and
32 so that is different than what we've dealt with with amberjack and
33 the others, and so it seems like a step in the right direction, to
34 me.

35
36 **VICE CHAIRMAN BARBIERI:** Well, fingers crossed that it is, and I
37 don't disagree, and I hope that it is, and I hope that all of this
38 works out, but, if I had to bet on it, I would not be putting too
39 much money on that number, because I don't believe the likelihood
40 is right that we will get it. Okay. Harry Blanchet has been
41 waiting patiently. Harry, please.

42
43 **MR. BLANCHET:** Thank you, Mr. Chair. We've had three items up
44 here that we've been talking about, but we also had mentioned,
45 earlier, the potential of other management actions, and one that
46 comes to my mind was the slot limit discussion, and we didn't
47 really fill out any of the -- What would that discussion -- What
48 would that framework look like?

1
2 Because we discussed it, it will be asked at some point, and I
3 think it would probably behoove us to at least begin putting some
4 parameters around what a slot limit would look like and if there
5 is any impact of that and what that might be, because, as it was
6 brought up, it will be brought up again. Thank you.

7
8 **VICE CHAIRMAN BARBIERI:** Thank you, Harry. Ryan, please.

9
10 **MR. RINDONE:** I have some questions about this too, about the idea
11 of a slot, and, just thinking about it from a shallow-water
12 perspective, because I think that was the context in which it was
13 being discussed, because that was where discard mortality is going
14 to be perceptibly the lowest, and the length at which 50 percent
15 of the females are reaching sexual maturity is just under the
16 minimum size limit, and I think it's like twenty-three-inches-and-
17 change, or something like that, and so, you know, twenty-four
18 inches, and we'll just go ahead and round it up and say that it's
19 there.

20
21 I guess what is the intention of the slot limit? Is it to -- If
22 we're treating it like red drum, and we want some measure of
23 escapement, you know, would we be talking about allowing say like
24 twenty to thirty-inch fish, with the thinking that a thirty-inch
25 fish, which is approximately five to six-years-old, may be starting
26 to, you know, consider its integration status, if it wants to make
27 the move on out to the spawning grounds or not, and like at what
28 size class are we going to try to make this restriction happen?

29
30 Then also thinking about the length composition of fish that are
31 occurring within those depth strata, and I think that's something
32 that we could actually perhaps use the truncated GFISHER index to
33 try to look at, and, if we put like a depth strata limit on there,
34 we can look at all the length samples that come from within that
35 depth strata constraint, and we could see, you know, what our
36 length compositions look like for that portion of that index. I
37 mean, I think there are ways of looking at it, but I'm just -- I'm
38 kind of wondering like what are thinking for potential sizes here?

39
40 **DR. ALLEN:** You know, I would word it not as a slot limit, but an
41 alternative size limit. It could be a minimum size limit or a
42 slot limit, but my thinking was that the discard mortality rates
43 inshore, less than thirty meters, are low enough that I think you
44 could control exploitation rate, potentially, with a change in
45 size limit, and so -- But I think it would take an analysis for us
46 to look at. I mean, you would have to run a simulation model and
47 see what -- You know, what would be the expected effect on
48 discards, what would be the expected change in landings, and, you

1 know, I don't think we can say that off-the-cuff.

2
3 **VICE CHAIRMAN BARBIERI:** Of course there is that paper, right,
4 that does exactly that, and so a model has been built, right, that
5 can -- So it would be a matter of just adjusting that, and so it
6 wouldn't like starting from scratch, right, and so it's something
7 doable that I think that, even if it was in a simulation framework,
8 would be helpful, right, and, I mean, this is when Nick Farmer
9 came over and presented on the red snapper, and it was all
10 simulation, but it was really informative for us to know that there
11 is no savings here that we can achieve, given the level, expected
12 level, of barotrauma. I can see that being, you know, a potential
13 -- Not necessarily immediately, but a potential option that, you
14 know, we could think about.

15
16 **MR. RINDONE:** So here is my fisherman opinion on it. I think that
17 the collective recreational fishing effort that's occurring in
18 those waters is going to make anything except a very narrow slot
19 limit not quite as effective as might be hoped. The larger that
20 that slot limit is, the more opportunity, in terms of time to
21 growth, that is going to exist for that fish to be selected by the
22 fishery, and so, unless it is very narrow, there's just simply too
23 much time, and too many anglers, and too much effort, in too
24 accessible a region, for that slot limit to be effective.

25
26 If we're talking like twenty-four to thirty-six inches, like the
27 amount of time it takes that fish to go, you know, from twenty-
28 four to thirty-six inches is a couple of years, at least, and so
29 that's, you know, two full fishing seasons, and odds are that a
30 fish that's hanging out around scalloping grounds, or anywhere,
31 you know, inside of twenty meters, is going to have at least heard
32 a boat, if not been caught at least once already, and so that's my
33 personal opinion.

34
35 **DR. ALLEN:** I mean, that may be, but we have an assessment. I
36 mean, we have some idea of what the harvest rate is for this
37 population, right, and so you could -- My thinking is to simulate
38 a range of minimum size limits and slot limits, which would include
39 the width of the slot limit, and see what level of conservation
40 could be achieved, potentially allowing a longer season, but still
41 allowing the adequate escapement to the offshore area,
42 potentially.

43
44 **VICE CHAIRMAN BARBIERI:** By the way, Mike, let's talk offline about
45 this, because, you know, I can see this being an option that would
46 be informative, one way or the other, whether the council decides
47 to take this on or not, and I think that this would be informative,
48 and I think that, you know, us going there, to at least look at

1 options, right, to look at potential scenarios of different slot
2 sizes, and what would be the probability of success, right, I think
3 would be valuable.

4
5 Let me make a little statement here, and it's past 4:00. We have
6 still the hogfish scope of work for SEDAR 94 to cover and then
7 public comment. You know, we've had excellent discussion today on
8 the gag issue, and, of course, it's a very complex -- I mean, this
9 is a problem and a situation that we are trying to solve, right,
10 and so I really appreciate everybody engaging and providing a lot
11 of very good information and discussion on this issue. Harry, if
12 you have another comment, please go ahead, but then, after this,
13 I would say let's move on on the agenda, because we still have to
14 finish the hogfish, and then we have public comment.

15
16 If we have some time tomorrow, depending on how tomorrow goes, we
17 can come back and try and see what we have discussed, the summary
18 of those bullet points that we have done, and we can start ranking
19 them, you know, like council members have requested us to do, and
20 I think that wouldn't be very difficult and time-consuming for us
21 to do, if we have time tomorrow. Harry, please.

22
23 **MR. BLANCHET:** It's very brief, and it's just, if we have a slot
24 limit that is also constrained by depth, then you're going to be
25 basically having to enforce that at-sea, rather than at the dock,
26 and that's all.

27
28 **MR. RINDONE:** Enforceability is definitely going to have to be a
29 consideration in any of this. I mean, any measures that can't be
30 enforced are useless, and so --

31
32 **DR. ALLEN:** That's a fair point.

33
34 **VICE CHAIRMAN BARBIERI:** Very good point, Harry, and we're going
35 to take that into account. All right, folks, and so, again, thank
36 you, everyone, for the excellent discussion, and I know that this
37 item was long. We've been trying to step away from it for a while,
38 but I think that the engagement of three council members, and the
39 request for more discussion and more guidance -- You know, we're
40 just trying to do our due diligence here and provide the level of
41 discussion that can be informative to the council.

42
43 With that, we're going to at least pause on completing this agenda
44 item, Agenda Item VI, and move on to Agenda Item VII, Discussion
45 of SEDAR 94 Florida Hogfish Scope of Work. Mr. Rindone.

46
47 **DISCUSSION: SEDAR 94 FLORIDA HOGFISH SCOPE OF WORK**
48

1 **MR. RINDONE:** Thank you. It's actually a scope of work/terms of
2 reference, and we kind of roll these things together with FWC,
3 who, thanks to Luiz's good communication, we were able to talk
4 with about this ahead of time, in preparation for this for you
5 guys.

6
7 SEDAR 94 will assess all hogfish all off of Florida, and only
8 Florida, and will consider data updates such as the consideration
9 of the State of Florida's State Reef Fish Survey for private vessel
10 catch and effort, and you guys should evaluate the terms of
11 reference for the assessment and propose any modifications, as
12 appropriate, and we would also like to solicit, from the
13 membership, volunteers for the data, assessment, and review
14 workshops for the assessment, and this one will function like a
15 benchmark assessment, as some of you that have been in servitude
16 with us for a while remember.

17
18 The council will then finalize the terms of reference and
19 appointments, in keeping with the council's internal SEDAR
20 approval process, and so, Jess, if you want to bring those on up.

21
22 Clearly there's a lot of information in here, but, again, the main
23 tenets are to do some of the things that we always do, which is
24 revisit things like life history, discard mortality rates,
25 measures of population abundance, the recreational and commercial
26 data, et cetera. With respect to the recreational data, or the
27 recreational catch statistics, we have added in a couple of key
28 points in here.

29
30 We've added a couple of points in here about exploring the
31 transition from MRIP-CHTS to MRIP-FES and discussing the MRIP pilot
32 study, to explore the State Reef Fish Survey data from the State
33 of Florida, and that would be for the recreational private vessels,
34 to explore the data that were collected for the Southeast For-Hire
35 Integrated Electronic Reporting program, for potential inclusion,
36 and whether the recreational fleet structure can be realigned into
37 individual fleets, as appropriate, and so, instead of combining
38 the recreational fleets, as is sometimes done to try to resolve
39 high CVs or low sample sizes or things like that, to see if it's
40 possible to keep those fleets separate and analyze them in that
41 way.

42
43 Now, I'm going to keep going, unless somebody raises their hand,
44 and so we'll scroll on down, and so we've also maintained in here
45 Term of Reference Number 8 that Dr. Scyphers had put in a while
46 back about incorporating social and economic information that
47 could affect stock status related to fishing effort and catch
48 levels, as practicable, and so, knowing that this assessment is

1 coming up, if any social or economic scientists have information
2 that they would like to start working up, or contribute, please
3 note that those things are considered.

4
5 We'll scroll on down to the assessment process, and so the
6 assessment workshop runs as it classically does, and the modeling
7 for -- The modeling efforts will probably begin sometime around
8 the conclusion of the data workshop, and I know that some
9 preliminary work has probably been played around with already, as
10 it usually is, and most of this will be held via webinar for the
11 assessment process, and so there won't be an in-person requirement
12 for this portion of the assessment.

13
14 Scrolling on down, there's a lot in here about evaluation and
15 comparison with the past stock assessment, which had broken up the
16 stock with a west Florida hogfish and Florida Keys and east Florida
17 stock, and not included here is the Georgia to North Carolina
18 stock, because it's such a small component, and because better
19 than 98 percent of the biomass of this species in the southeastern
20 United States is off of Florida, and so that's what we're sticking
21 to assessing here. Luiz.

22
23 **VICE CHAIRMAN BARBIERI:** So a quick question on the parameters
24 there for stock projections, and do we have -- There is nothing
25 explicit here, and maybe it doesn't have to be here explicit,
26 right, regarding FMSY proxies, and do we have approved proxies for
27 the --

28
29 **MR. RINDONE:** We do, and it's the yield at the fishing mortality
30 rate corresponding to the 30 percent spawning potential ratio, and
31 so, if there was something else that was requested to be explored,
32 considered, what have you, then you guys should note that. That
33 also does not preclude the assessment team from also discussing
34 with the assessment panel what the model is saying would be the
35 native MSY proxy, if that's calculable, based on the data.

36
37 **VICE CHAIRMAN BARBIERI:** Okay. Perfect, and then we don't have to
38 be explicit. Okay. Thank you.

39
40 **MR. RINDONE:** All right, and then, for the review workshop, this
41 is pretty standard kit also, and we'll scroll on down, and so, for
42 the review workshop, it's generally proposed as a series of
43 questions about the evaluation of the data and the decisions that
44 were made by the data workshop and the assessment workshop and a
45 characterization of the model's performance and evaluation of
46 stock status.

47
48 Then, also, things like diagnostics and uncertainties are

1 discussed, and the degree to which those things are characterized
2 and discussed in the report, and then research recommendations are
3 a facet of every step of the process, but are compiled during the
4 review workshop, and those are the terms of reference.
5

6 **VICE CHAIRMAN BARBIERI:** So one other quick question. Are we
7 expecting this to go to CIE review, since it's going to be a
8 benchmark and a brand-new model, or do we run this as an
9 operational assessment?
10

11 **MR. RINDONE:** Is Julie on? She's got something, I think, with
12 Caribbean SSC, also. If she's got her hand raised, go ahead and
13 follow-up.
14

15 **DR. JULIE NEER:** No, this is a benchmark, and benchmarks have CIE
16 reviews. That is the intent.
17

18 **MR. RINDONE:** There you go.
19

20 **VICE CHAIRMAN BARBIERI:** Yay. Thank you, Julie.
21

22 **MR. RINDONE:** Barring any edits, we will send this to the council
23 for approval to the council's internal SEDAR approval process, and
24 if the --
25

26 **DR. NEER:** Ryan.
27

28 **MR. RINDONE:** Yes, ma'am.
29

30 **DR. NEER:** This set of terms of reference is going to go to the
31 South Atlantic SSC for review in October, and I know they're two
32 separate stocks, but we're still having them sort of reviewed as
33 one thing, and so, after that, then you can send it along to your
34 council.
35

36 **MR. RINDONE:** Okay. I thought they had already seen it, but okay.
37

38 **DR. NEER:** No, and they're seeing it in October, in a couple of
39 weeks.
40

41 **VICE CHAIRMAN BARBIERI:** Sorry, but now I am confused.
42

43 **MR. RINDONE:** So the South Atlantic Council -- Because we're
44 managing on both sides of the peninsula, the South Atlantic
45 Council's SSC will evaluate these also, and so, if the Gulf Council
46 doesn't have any changes, then this draft will go to the South
47 Atlantic Council's SSC, and then, if they don't have any changes,
48 which, if you guys don't, it seems less likely that they would,

1 and then they would get approved.
2
3 **VICE CHAIRMAN BARBIERI:** Then maybe I am misremembering here, but
4 I thought that the South Atlantic was a different stock altogether.
5
6 **MR. RINDONE:** But we're assessing the Florida Keys, or, sorry, the
7 Keys and east Florida stock and the west Florida stock, both of
8 those, in this effort.
9
10 **VICE CHAIRMAN BARBIERI:** But they're separate assessments, using
11 different reference points.
12
13 **MR. RINDONE:** Yes.
14
15 **VICE CHAIRMAN BARBIERI:** I see. Okay, because the stock over there
16 is in a rebuilding plan.
17
18 **MR. RINDONE:** Right.
19
20 **VICE CHAIRMAN BARBIERI:** Okay.
21
22 **MR. RINDONE:** I have found some big hogfish off the Tortugas, by
23 the way, and so --
24
25 **VICE CHAIRMAN BARBIERI:** The way that you were talking, and the
26 way Julie was talking, it gave the impression that this was going
27 to be like we did for yellowtail snapper and mutton snapper, and
28 it was a single stock throughout, you know, the Florida, or
29 southeastern United States, and it's co-managed by the two
30 councils, but, in this case, you have two different stocks, and
31 there will be two different assessments, and so, you know, the
32 other stock, Julie, that is there for the South Atlantic is under
33 a rebuilding plan, right, and this one over here was never
34 determined to be overfished or undergoing overfishing, but, if
35 what you mean is that these terms of reference would be universally
36 applied to both assessments, that's fine. Go ahead, Julie.
37
38 **DR. NEER:** Yes, they're two separate assessments, and they're
39 planning on being run as two separate assessments, but they're all
40 part of one SEDAR, and we have one planning team, and the planning
41 team did not recommend splitting up everything at the terms of
42 reference level, since almost all of it is the same for the two
43 different regions, but, the way the projections and stuff are laid
44 out, it allows for differences between the two assessments, as
45 needed.
46
47 **VICE CHAIRMAN BARBIERI:** Thank you so much for the clarification.
48 That was my confusion, and so thank you. Doug.

1
2 **MR. GREGORY:** Thank you. I'm sorry, and I must have dozed off,
3 but so there is a third hogfish stock off of North and South
4 Carolina, correct, and this does not include that?
5
6 **MR. RINDONE:** Correct. It doesn't include that, because that
7 stock, in term of the total southeastern U.S. biomass of hogfish,
8 is a very, very small component of it.
9
10 **MR. GREGORY:** Right.
11
12 **VICE CHAIRMAN BARBIERI:** We don't have enough data for that stock
13 to support a model-based assessment, and so management advice that
14 was provided by the South Atlantic SSC for that stock in the past
15 was based on ORCS, which, as you know, is average landings,
16 because, you know, there wasn't enough data to support a model-
17 based assessment.
18
19 **MR. GREGORY:** Okay. Thank you.
20
21 **VICE CHAIRMAN BARBIERI:** Any other comments or questions regarding
22 southeastern U.S. hogfish, SEDAR 94? Do we need to ask for
23 volunteers?
24
25 **MR. RINDONE:** Yes, and, if I don't get them, I'm going to pick at
26 random.
27
28 **VICE CHAIRMAN BARBIERI:** Let's start with the data workshop. Any
29 volunteers for the data workshop? How many do we need, Mr.
30 Rindone?
31
32 **MR. RINDONE:** I mean, it would be nice, for the data workshop, to
33 have three or four, to have three for the assessment workshop and
34 at least three for the review workshop, with, you know, at least
35 somebody volunteering to be the chair for the review workshop,
36 just so that the council has options, and so I don't know if it
37 will be one of our SSC members or one of the South Atlantic SSC
38 members that would ultimately chair the review workshop, but, you
39 know, just in case somebody's availability changes, and, you know,
40 we're trying to plan far out in advance here. Then, based on what
41 SEDAR tells the council we have, as far as the number of slots,
42 that will dictate how many people are ultimately appointed and can
43 go.
44
45 **VICE CHAIRMAN BARBIERI:** Okay, and so two to three volunteers for
46 the data workshop, or three to four?
47
48 **MR. RINDONE:** Three to four for the data workshop, two to three

1 for the assessment, and two to three for the review.
2
3 **VICE CHAIRMAN BARBIERI:** Data workshop?
4
5 **DR. CRABTREE:** All of it.
6
7 **VICE CHAIRMAN BARBIERI:** All of it? Now that is a giving person.
8
9 **MR. RINDONE:** You can volunteer for all of them, but I'm only going
10 to put you in one of them, and so, if you have a preference, state
11 your preference.
12
13 **VICE CHAIRMAN BARBIERI:** I would say review. Roy Crabtree has
14 volunteered for the review. Any other SSC members that would
15 volunteer for the review? Julie, can I volunteer for the review,
16 or is that too close to home for me?
17
18 **DR. NEER:** That's an excellent question. I think you probably
19 could, but it might be wise if maybe you volunteer for the review
20 as the chair, and that would be ideal, and then you could
21 participate in another stage as an active participant, since the
22 chair is not on the review panel proper.
23
24 **VICE CHAIRMAN BARBIERI:** Sure. I can do that. I will volunteer
25 to chair the review, and I will volunteer for the assessment panel.
26 Any other volunteers for the data, assessment, and review? Is
27 Will Patterson on the webinar, because, if not, he is going to be
28 volunteered for something.
29
30 **DR. PATTERSON:** No, he's here.
31
32 **VICE CHAIRMAN BARBIERI:** Did you just raise your hand there, Will?
33
34 **DR. PATTERSON:** Only to correct you.
35
36 **VICE CHAIRMAN BARBIERI:** Come on, Will. This is hogfish. It's
37 cool and different.
38
39 **MR. RINDONE:** And delicious.
40
41 **VICE CHAIRMAN BARBIERI:** And delicious, yes. Okay. It looks like
42 we don't have a lot of enthusiasm in the room about hogfish. We
43 don't have the timeline here, but this is going to start in 2025?
44
45 **MR. RINDONE:** Yes, and so it's a couple of years away.
46
47 **VICE CHAIRMAN BARBIERI:** Okay. We've got Josh Kilborn for the
48 data workshop. Doug Gregory, you are a Florida Keys man, and

1 hogfish is dear to your heart, correct?
2
3 **MR. GREGORY:** It was, until you all destroyed it.
4
5 **VICE CHAIRMAN BARBIERI:** Well, here is the opportunity to
6 contribute to rebuilding it.
7
8 **MR. GREGORY:** No, I don't think so.
9
10 **VICE CHAIRMAN BARBIERI:** Thanks, but no thanks?
11
12 **MR. GREGORY:** Thanks, but no thanks.
13
14 **VICE CHAIRMAN BARBIERI:** Okay. Steven Scyphers, for which one,
15 data or assessment? I would say data, because we have more, and
16 we need four, right, for data. Any more? If not, we can revisit
17 it tomorrow, after you have a good night's sleep and you dream of
18 hogfish, and you can come back tomorrow all excited to volunteer
19 for hogfish.
20
21 **DR. NEER:** Mr. Chair?
22
23 **VICE CHAIRMAN BARBIERI:** This is going to be in 2025, and we don't
24 have the specific schedule, that I can remember, and, Julie, do we
25 have a schedule already put together?
26
27 **DR. NEER:** Perhaps. The current schedule has this data workshop
28 starting in August of 2025, but there's some yellowtail issues
29 that may cause a delay in the start of that process, which are yet
30 to be determined.
31
32 **VICE CHAIRMAN BARBIERI:** I'm sorry, and, Julie, you were breaking
33 up, and I'm going to have to disconnect you. I'm just kidding.
34
35 **DR. NEER:** Can you hear me now?
36
37 **MR. RINDONE:** With that, you have public comment.
38
39 **VICE CHAIRMAN BARBIERI:** Right. Okay, and so we don't have, I
40 guess, all the SSC volunteers.
41
42 **MR. RINDONE:** We're just going to bingo-ball it, and so you'll get
43 an email saying you've been voluntold.
44
45 **VICE CHAIRMAN BARBIERI:** No, but, you know, people will have an
46 opportunity still tomorrow before the report is put together and
47 to have some time to look at your schedules and to volunteer, and
48 it would be good to have good SSC representation. With that, we

1 complete this agenda item, Agenda Item Number VII, and we will
2 move on to Agenda Item -- The last item on the agenda, which is
3 public comment. Is there anyone, either here in the room or
4 online, who would like to provide public comment? The gentleman
5 there in the back. Clay, is that you?
6

7 **PUBLIC COMMENT**
8

9 **MR. CLAY SCHIEBLER:** Thank you, Mr. Chair, and thank you to all of
10 you guys and all the hard work you do to manage these fisheries
11 for us. My name is Clay Schiebler, and I'm the owner of Hang 'Em
12 High Sportfishing out of Crystal River, and gag grouper is
13 something that is super important to us.
14

15 I don't come here to say that you need to give us more time, or
16 give us more fish, as I'm here to ask for having last year back
17 and not having the regulations that we do need, and I've been here
18 all day, and I've listened to a lot of this, and I have spoken
19 with a lot of people in regard to the subject, and I firmly believe
20 in that, if you lower the bag limit to one fish, it is by far the
21 safest bet, and I do understand that we just took a massive cut in
22 our fishery, and I own nine federally-permitted charter boats, and
23 four of those are Freeman offshore boats, and five of them are bay
24 boats, and so my fishery is very split.
25

26 We fish from the forty-break to eight feet of water for gags. That
27 being said, we are some of the most successful gag grouper charter
28 fishermen out there, and I actually was looking at the schedule
29 and looking at the numbers and doing the math on my phone, and, in
30 this seventy-day season, just my company alone is on track to kill
31 roughly 36,000 pounds of gags, and I say that saying that I
32 understand that the data shows that, if you go from two to one,
33 there's not a dramatic curve in how many fish actually die, but
34 the truth -- I understand that you may not be able to get to this
35 from a science standpoint, but the truth is that all the guys that
36 are really good at this, me and my nine captains, all the guys
37 that, you know, have a bay boat on the river in Crystal River or
38 Homosassa, and you name the place, and the guys that are very good
39 at this, that do limit out very consistently, because it's a very
40 that, once you crack the code, it is very easy to catch them.
41

42 That being said, you go from two to one, and you cut that in half,
43 immediately. If you take the top 20 percent of the fishermen in
44 the game and you cut their total fish killed in half, then you
45 have accomplished something very big, from the fisheries
46 standpoint, and, at the same time, all these people that have
47 bought bay boats through COVID, and are now targeting gag grouper,
48 they still have a reason to have their boat.

1
2 How that works, in my opinion, in relation to protecting males, is
3 the guys that have the big offshore boats will not run as far to
4 where the males are, and, in my opinion, and I know there's
5 multiple people that agreed with this, the large females, the
6 forty-inch females that are on the verge of making the transition,
7 or are in transition, are also out deeper, predominantly.

8
9 That being said, those fish will also be protected, more so by a
10 one-fish-per-person bag limit, and I can still sell a charter at
11 one fish per person. It may be more challenging, but it will put
12 the burden on me. It will make me do my job, and I think that's
13 a reasonable statement.

14
15 I was really hoping to see one fish per person this year, because
16 it seems almost impossible to not go over the quota this year, and
17 I understand that, and I understand that, yes -- I gag fished
18 yesterday, and I ran two charters, and I caught twenty-nine keeper
19 gags yesterday. We kept our limit on both trips, and, in relation
20 to discards, and I apologize for not knowing your name, but you
21 did speak about discards quite a bit, and it's something that can
22 be something very different in a lot of places.

23
24 If I'm discarding a gag on the forty-break, there's a high
25 probability the fish doesn't make it, but, on the other side of
26 the coin, yesterday, when I was in no deeper than twelve-foot of
27 water, we caught our limit on our second trip in five minutes, and
28 it was four baits, no shorts, all twenty-eight-inch fish.

29
30 After that, we were having a good time, and, although they are
31 discards, there is almost no chance that they don't survive, unless
32 a circle hook doesn't do its job. That being said, it's a strange
33 fishery, and you can say that a gag grouper can be a true sportfish,
34 like a tarpon, where I take customers in March, and we go catch
35 them and have fun and let them go, and we have no intention of
36 hurting a fish, but they can be, because they're a predator and
37 they're fun, not like a red grouper.

38
39 That all goes back to my point that it's a -- You guys have a
40 really ugly job on this one of protecting a fish that lives in
41 eight feet of water and acts one way and in 300 and acts another
42 way, but I feel that it is an extremely safe statement, from your
43 end to the council, to say that one per person wouldn't be a bad
44 idea, and I know that I'm putting myself and my company and a lot
45 of people in a box that have to deal with that, but I also
46 understand that, if we come back and we don't go over the quota,
47 we have the opportunity to see more days and more days and more
48 days, and we get to fill in the season at the end of the year, and

1 you can come back and say, in September of 2028, we're going to
2 have two fish per person in September, when it's hard to catch
3 them, and then it goes to one, October 1 through the end of the
4 year.

5
6 You start to rebuild this thing in that direction, where we have
7 the days, and we have little fear of going over, and the public
8 has already come to terms. I am thirty years old, and so I'm not
9 an old guy, but I've run my company for twelve years, since I was
10 eighteen, and the public has come to terms with going from five
11 fish to two fish, from twenty inches to twenty-two to twenty-four.

12
13 The public has come to terms on redfish going from one to two to
14 back to one, and the public will come to terms with going to one
15 gag, and it is a frustrating scenario, and I understand that you
16 guys -- I say you guys, and I understand that management has a
17 track record of maybe not giving it back, and I get that, and I
18 understand that I'm asking for something that I may never see
19 again, but, at the same time, it's the right move for the fishery.

20
21 I know that we have a strong fishery, but I also know that we have
22 to rely on the data that you guys are looking at, and it doesn't
23 matter what I caught yesterday, or two weeks ago, and it matters
24 what happened years ago, and I get that, and that's why I'm kind
25 of really pushing toward the idea that reef fish don't have to be
26 a kill-them-all concept, and being able to keep one, harvest a
27 nice fish, enjoy it, catch some fish, let them go, in an ethical
28 manner in shallow water, and I would never tell somebody to go to
29 a hundred foot of water and catch gags for fun, but in ethical
30 manner, and you can change the mentality around this fishery over
31 time, just like with redfish.

32
33 You know, I think that's something that's kind of a touchy subject,
34 because it's hard to tell somebody that, hey, have fun and go catch
35 gags in twenty foot, but don't go have fun and catch them in a
36 hundred, and that's bad, but I think that you guys all have a ton
37 of information in front of you right now, as to what is the best
38 route, and I feel like, if you did go to one fish per person,
39 although plenty of people are not going to agree with me, it is a
40 very, very safe bet that we won't be looking at going over quota
41 in the future, and we'll look at building a very sustainable
42 fishery and protecting males, which it all kind of points in that
43 direction, and, as a guy that has a lot of charterboats, I think
44 that it's the right move.

45
46 **VICE CHAIRMAN BARBIERI:** Well, first of all, Clay, thank you for
47 taking the time to come in-person to join us today and to provide
48 this public testimony, and I think this is super helpful, right,

1 to get that perspective that we may not have in all of those
2 issues, and so I just want to thank you for that, because that was
3 really informative, and I appreciate it. Then we have already
4 some people, if you have an extra minute, Clay, and we have some
5 people wanting to ask some questions. I will start with Trevor
6 and then Steven.

7
8 **MR. MONCRIEF:** All right, and so I appreciate that comment, because
9 it's very informative, and it's nice to see where you stand on it,
10 and so you touched on a subject, and it kind of made me think, and
11 it's one that we didn't cover today, or didn't think about, right,
12 and the bag limit analysis that was undertaken is those that are
13 intercepted at public docks, when it comes down to it, and you
14 said you've got a fleet of Freemans, and you've got a lot of guys
15 that are probably returning to private docks, and what -- In your
16 opinion, do you think that there is a large proportion of
17 individuals targeting gag from private docks, and, if there is,
18 are they more likely to be harvesting over one fish per person,
19 compared to the public-access fleet?

20
21 **MR. SCHIEBLER:** I am not the type to lie, and definitely not to a
22 group of people like you, but I can also -- I will tell you the
23 reality is that, when you look at the map, and we looked at where
24 the majority of the gags are, and everybody has talked about Big
25 Bend, Big Bend, Big Bend, you know, north of Tampa, and, if you
26 look at some sociodemographics on the people that live in that
27 area, which is me, and I'm from Crystal River, Florida, and I
28 understand.

29
30 The likelihood of taking a guy that has caught gags his whole life,
31 and has seen it go from five to two to twenty to twenty-two to
32 twenty-four inch minimum, and then he pulls up to the boat ramp,
33 and the MRIP agent is standing there, with their little iPad in
34 their hand, ready to talk to them, and they say, well, what did
35 you catch, and they just go, sorry, and I'm not talking to you,
36 and we see it all the time.

37
38 I'm actually the owner of Shrimp Landing Marina, which was Bob
39 Gill's old marina, and MRIP is there, and bio is there, and Hayden
40 and her team were just there and got a lot of -- They got nearly
41 200 samples in a week for gag gonads, and we're doing our part,
42 because we understand that the bulk of the resource is at my
43 fingertips, and I get that. Within a hundred miles of Crystal
44 River, which is where I can go in a Freeman, I can see most of the
45 gags from there.

46
47 That being said, you know, there is a ton of people that,
48 especially in my area, that, if they heard me sit here and make

1 this statement, would think that I have lost my mind, but there is
2 so many people that don't trust -- That they would tell an MRIP
3 agent the truth, and it would go in the right direction, because
4 I think somebody already said it, and, you know, you get that
5 feeling like they take and they take and they take, and the truth
6 of it is that I think the fishery gets more challenging, but, at
7 the same time, I also know how many people are on the water
8 nowadays, versus when I was a kid, and you cannot expect everybody
9 to go out and kill five gags these days.

10
11 Yes, there is a ton of private guys that are extremely talented at
12 this fishery, because, like I said, it's not as hard as you would
13 think, truthfully, especially in our area, where the bulk of the
14 fish are, and so --

15
16 **MR. MONCRIEF:** I would say there could be a chance that we're
17 underestimating the potential impact of a bag limit, by
18 constraining to the data sources that are available, and so that's
19 a valid point to make.

20
21 **VICE CHAIRMAN BARBIERI:** Right, and, in that case, you're agreeing
22 with Clay, right, that, actually, a reduction in the bag limit
23 might be beneficial, because a fish that you don't kill
24 intentionally has a higher probability of survival than the one
25 that you're trying to kill intentionally, and that's just simple,
26 right?

27
28 **MR. SCHIEBLER:** Correct, and I don't think you can stop people
29 from being people. I don't think you can slow down high-grading,
30 necessarily, but I think that, if you reduce it to one, it's going
31 to, at least in people's minds, make it to where they're going to
32 go catch their fish, or catch as many as they want, and then
33 they're going to move on to something else, which is what we've
34 done when it went from five to two. You know, it's a very similar
35 concept. Nobody gag fishes all day anymore, if they're good at it
36 and you catch them early, and so that's kind of the thought.

37
38 **VICE CHAIRMAN BARBIERI:** Thank you for that. Steven Scyphers.

39
40 **DR. SCYPHERS:** Thank you. Thanks for coming and sharing your
41 experience with us, and so, when you are fishing gag, what other
42 species are most important for you and your customers, and, if you
43 are running trips, in a scenario where gag could be closed, what
44 do those trips look like? What are you targeting, and how does it
45 change things?

46
47 **MR. SCHIEBLER:** As soon as gag season ends this year, we will
48 convert over to mangrove snapper, and like, right now, our offshore

1 trips are gags, mangrove snapper, hogfish, and yellowtail, are the
2 main targets, and, that being said, you know, it is going to just
3 move pressure. Like somebody said, if you push it one spot, it
4 pops up in another, and we do understand that, and that's also
5 why, with the projection of seasons getting shorter before getting
6 longer, if you have more days, from our standpoint, it does
7 alleviate pressure on other things, you know, to where we can go
8 out, and I actually have a lot of customers that only keep gags
9 over thirty inches.

10

11 We don't put anything in a live well. We just let them go. We
12 just catch them, and we let them go, and we're fishing in less
13 than twenty feet of water, and we almost never see sharks, and so
14 it's almost as safe of a fishery as you can get. It would be safer
15 to do that than to go catch and release speckled trout, and so
16 that's kind of the standpoint, but we do a lot of inshore for
17 trout, redfish, and snook, and so that would be our fallback plans,
18 beyond mangrove snapper and stuff that lives on the same rocks as
19 the gags.

20

21 **VICE CHAIRMAN BARBIERI:** Thank you, Clay. Any other questions for
22 Clay? C.J.

23

24 **DR. SWEETMAN:** Thank you, Clay. I really appreciate your
25 perspective here, especially with talking about reduction of bag
26 limit and how it directly impacts you, and I appreciate your
27 perspective on that, and so I want to take it a little step further,
28 and just something else that we've talked about, and I'm not
29 advocating for this one way or the other, but the vessel limit
30 option that we've talked about today. That would, obviously, be
31 more impactful, from a conservation perspective, but also more
32 impactful from your business perspective, and I'm curious your
33 thoughts there.

34

35 **MR. SCHIEBLER:** I think the vessel limit gets very tricky, unless
36 you cap it at six for a six-pack boat, and I think, if you cap it
37 at a lower number than that, it's going to create an unfair
38 scenario that I have a lot less control over, and a lot less
39 ability to sell the trip on, and I think there's a lot of -- I
40 think there's a reasonable amount of positive to say about a vessel
41 limit, because -- It may sound crazy, but, yes, when you get on
42 gags, it is not hard to catch twelve, for a six-pack boat, and, I
43 mean, I don't feel like it's hard very often, especially not now,
44 but I think, if you considered a vessel limit lower than six, you
45 would put a bunch of guys like myself and Ed Walker, and there's
46 a lot of guys that do this, in a very uncomfortable predicament,
47 from an offshore standpoint.

48

1 **VICE CHAIRMAN BARBIERI:** Thank you, Clay. Any other questions for
2 Clay? Obviously, you have a lot of experience with this specific
3 fishery, right, in the core center of abundance of the stock.
4 Clay, again, there are no other questions today, but thank you for
5 coming over and providing all of this input. It's really, really
6 valuable, and it's much appreciated.

7
8 **MR. SCHIEBLER:** Thank you. I appreciate you guys.

9
10 **VICE CHAIRMAN BARBIERI:** Do we have -- Let me just check to see if
11 we have anybody else here in the room that would like to provide
12 -- Mike Drexler.

13
14 **MR. MIKE DREXLER:** Thank you, Mr. Chair and SSC members. Michael
15 Drexler, Ocean Conservancy, and, also, thank you, Clay, for those
16 comments. It's a hard act to follow, and it's pretty impactful.

17
18 I just want to -- You know, on gag, I just want to, A, thank the
19 council and SSC for looking at these additional measures. You
20 know, we felt the current rebuilding plan wasn't sufficient,
21 because of all of these complex issues, and we really appreciate
22 the work to keep looking at this.

23
24 I just wanted to reinforce the point that Will Patterson started
25 on discards. You know, my back-of-the-envelope suggests that
26 discard mortality is the largest fraction of total mortality for
27 the stock right now, and that's the case for a lot of our fish
28 stocks, and I haven't done the hard math on that, and so feel free
29 to qualify that, but I also wanted to point out that we don't have
30 any checks on discards in our process. The only time that discards
31 come into account is through our stock assessment. The council
32 doesn't see the discard estimates every year the data is available,
33 and they do check-ins on total landings against the ACL, and we
34 don't check-in on discards.

35
36 I also looked at the stock assessment schedule, and so the next
37 time we'll get a check-in on this will be 2027, after these
38 increases in ACL have been implemented, and so, given the fact
39 that -- You know, to use the doctor analogy, it's kind of like
40 trying to take your open, bleeding victim and treat him with a
41 split or a topical cream or something, and so, you know, that's
42 not a criticism, and it's just a suggestion. Maybe we should build
43 that check into our process. It's a piece of data that we have
44 available, and I point out that those increases will go into place
45 before we really have a chance to check in on them.

46
47 You know, also, thinking about those increases, I've gotten up
48 here and talked about our retrospective kind of performances for

1 some of our stocks, and so I wanted to flag that, in the spirit of
2 those increases, which will bring ACLs back to levels they are
3 currently in four years, and that's not a criticism, and it's just
4 an acknowledgement of kind of what we've seen in the past in the
5 information we have.

6
7 So, you know, I thought maybe this is an opportunity to change the
8 way we do things, given that we can't predict, or we have a hard
9 time predicting, how effort is going to shift, although Dr. Hyman
10 back here is creating some pretty convincible models of that for
11 the reef fish fishery, and maybe prediction isn't what we need.
12 Maybe these annual checks is what we need, and so increasing these
13 annual checks on these interim analyses, and they can be simpler
14 than even the simple ones we're doing now, but just as a check,
15 checking in on discards annually, and maybe developing these sex
16 ratios, or if, you know, age comp is a good proxy for that.

17
18 There is examples of this in other councils. There are either
19 rebuilding check-ins for all of your rebuilding stocks or this
20 idea of ecosystem and socioeconomic profiles, where there is five
21 or so supporting indicators to kind of guide your decision-making,
22 and so that's all I've got, really. If we can't predict, then we
23 should monitor these important factors, and let's take the vital
24 signs to try and get to where we need to get in our process. Thank
25 you.

26
27 **VICE CHAIRMAN BARBIERI:** Thank you, Mike. Hold on for a second.
28 Let me see if there are any questions from the committee. No
29 questions. Thank you, Mike. Then, if there is nobody else in the
30 room, we have one person online, Brian Lewis, who is waiting,
31 right, to give public testimony. Go ahead, Brian.

32
33 **MR. BRIAN LEWIS:** All right. Good afternoon. I wanted to thank
34 you for this opportunity, Mr. Chair. There's a lot of talented
35 people that are in this meeting today, and they all have a lot of
36 knowledge, probably more than I will ever have, but, that said, I
37 own a commercial fishing vessel down at Frenchy's, and we fish for
38 Frenchy's seafood. We catch grouper and snapper, and we reef fish.

39
40 We're a bandit boat, vertical line rod-and-reel, and, you know, I
41 heard some talks about all kinds of different scenarios here today,
42 and, you know, I've listened to the bag limit idea, and that's
43 probably not a one-size-fits-all tool for the recreational side of
44 things, but I want to mention something, right, and the big
45 reduction that I heard Mr. Boyd talk about, and Trevor, and we've
46 had a pretty big, substantial reduction here.

47
48 I think, you know, the whole point of this situation that we're in

1 is because, you know, we've been overfishing the fishery, and so
2 I think that, with this big cut, I think we need to kind of -- You
3 know, with these interim analyses that may occur, we need to watch.
4 You know, we need to sit back and watch. I think that maybe the
5 bag limit may be a good idea for the inshore fishermen, but it may
6 not be a good idea for the offshore fishermen, okay, for the
7 recreational side of things.

8
9 You know, the deepwater fish -- We're talking about a lot of
10 things, like discard mortality, and I think the inshore gag complex
11 can pretty much handle itself on discards, and so, again, back to
12 what I said earlier, that, you know, it's not a one-size-fits-all,
13 and so I think that that's something that needs to be kept in
14 consideration.

15
16 I am also wanting to offer our assistance, with my commercial
17 fishing vessel, and, if there's a way for us to help assist in a
18 tag program, and, you know, I hear a lot of things about money,
19 and money seems to always be a problem, right, and so, you know,
20 we've got a cost recovery fee with the IFQ program, right, that we
21 pay for the IFQ program, 3 percent off of our trips, and I'm
22 prepared to offer something up out of our trips, if we can help
23 try to help our fishery rebuild.

24
25 We're in this for the long haul, okay, and I'm not out there to
26 kill fish, the kill-them-all mentality, and I want them to be here
27 for my grandkids and their kids and so on, you know, and so I
28 think, you know, one of the best things that the fishermen have to
29 offer is we are good scientists. We are probably the best
30 scientists available out there, and so please try to make use of
31 us in any way possible.

32
33 You know, maybe the charter/for-hire guys -- You know, I was kind
34 of upset that they lost the ability to have the VMS system, because
35 I think that would have been a great tool for them for data
36 collection, and, you know, it could have paid really good attention
37 to what they were doing in their fishery, and, you know, maybe, at
38 some point, you know, the private recreational fishery can come up
39 with some other system just for them that, you know, can better
40 attention, but I think that -- I think we need to pull the reins
41 back here just a little bit, and let's wait and see, you know,
42 what's going to occur here and see how the fishery rebuilds, okay,
43 and, you know, for the male gag situation -- Well, I mean, we need
44 more data collection on that.

45
46 What I was mentioning earlier is the ability for my commercial
47 fishing vessel to maybe help assist with that, and so I'm offering
48 our services with our fishing vessel, and, if you could pass that

1 on, we would be happy to try to help out.

2
3 You know, I know Clay Schiebler, and he actually bought one of my
4 fishing boats, and he's got a great business going for himself,
5 and I would like to see him succeed, you know, and I think many of
6 the other people as well, and so hopefully -- I'm just letting you
7 know we're here to help. All right. I appreciate the time.

8
9 **VICE CHAIRMAN BARBIERI:** Thank you so much, Brian. We really
10 appreciate you taking the time to provide the comments, and it's
11 helpful, and the offer, you know, to help participate in data
12 collection, and join some of these cooperative research projects,
13 is really valuable, and so thank you for providing those comments.
14 Any questions for Brian? Brian, no questions at the moment. Thank
15 you for coming.

16
17 **MR. LEWIS:** All right. Thank you.

18
19 **VICE CHAIRMAN BARBIERI:** Let me see if we have anybody else. Jess,
20 I don't see any other names there in the queue, and so I think we
21 are all done, in terms of public comment, for today. This allows
22 us to adjourn day one of our meeting, right, and we're going to
23 reconvene tomorrow morning at 8:30 a.m. Eastern Time, and so not
24 9:00, like we're used to, but 8:30 tomorrow morning, and our first
25 agenda item for the morning is going to be a review of Gulf of
26 Mexico gag health check with Dr. Lisa Ailloud and Dr. Katie
27 Siegfried.

28
29 They're going to be here to present and discuss that with us, and
30 so a nice segue to all of the discussions today regarding gag, and
31 I hope that everyone has a good evening. Thank you, again, to all
32 the presenters today. That was super helpful, and it's much
33 appreciated, and it was a great discussion, and I will see you all
34 in the morning.

35
36 (Whereupon, the meeting recessed on September 27, 2023.)

37
38 - - -

39
40 September 28, 2023

41
42 THURSDAY MORNING SESSION

43
44 - - -

45
46 The Meeting of the Gulf of Mexico Fishery Management Council
47 Standing and Special Reef Fish, Special Socioeconomic, and Special
48 Ecosystem Scientific and Statistical Committees reconvened on

1 Thursday, September 28, 2023, and was called to order by Vice
2 Chairman Luiz Barbieri.

3
4 **VICE CHAIRMAN BARBIERI:** All right, everyone. We got the thumbs-
5 up from Jessica Matos, and so we are ready to get started. Good
6 morning, and welcome to day two of the Gulf Council's SSC September
7 meeting.

8
9 We are going to start this morning with Agenda Item Number IX,
10 which is Review of Gulf of Mexico Gag Health Check, and I don't
11 know, Dr. Siegfried, whether we have Dr. Ailloud that's going to
12 be online and giving the presentation, and we have Dr. Siegfried
13 here in the room as well to help address any questions that we
14 might have, but, before we get started with that presentation, I
15 just want to point out that Steve Saul actually put together a
16 basic skeleton framework of our potential ranking, right, of
17 management actions that the council is considering, and, you know,
18 in talking to Steve, I think the idea is really, really good.

19
20 That would allow the SSC, based on what we know regarding the
21 fishery life history and population dynamics of gag, to use our
22 scientific information and knowledge, right, and professional
23 judgment to rank those options in terms of likelihood of success,
24 and so, basically, we are not picking any options for the council,
25 and we're not overstepping our charge here, but we're really just
26 providing a list of options that they have already given us, right,
27 back to them with rankings of likelihood of achieving the level of
28 reduction in fishing mortality that they expect to achieve, and,
29 that way, they can go and, you know, choose on their own which one
30 of those options they would prefer to maintain or remove or
31 whatever they want to do with it.

32
33 You know, to make sure that we cover everything that we need to
34 cover today in a timely manner, I would say let's go ahead and
35 follow our normal agenda, right, and then we'll earmark a little
36 bit of time, towards the end of our agenda, to go through those
37 options, and then we can develop some kind of process for ranking
38 them, right, and so, with that, I think we are ready to get started
39 on the presentation, and it's a Review of Gulf of Mexico Gag Health
40 Check, and we have Dr. Ailloud online. Lisa, are you ready?

41
42 **DR. LISA AILLOUD:** Yes, I'm here.

43
44 **VICE CHAIRMAN BARBIERI:** Excellent. Thank you. I'm sorry. We
45 have a question from Paul.

46
47 **DR. MICKLE:** This material that you're talking about, can it be
48 sent out, so we can look at it before we talk, or was it sent out

1 last night and I didn't see it?
2

3 **VICE CHAIRMAN BARBIERI:** (Dr. Barbieri's comment is not audible on
4 the recording.)
5

6 **DR. MICKLE:** Okay. Sorry.
7

8 **VICE CHAIRMAN BARBIERI:** Thanks for the reminder, because I had
9 forgotten to bring that up. Okay. With that, Lisa, whenever
10 you're ready. First, we have the scope of work. Mr. Rindone.
11

12 **REVIEW OF GULF OF MEXICO GAG HEALTH CHECK** 13

14 **MR. RINDONE:** Thank you, sir. Dr. Ailloud is going to wow us with
15 the 2023 Gulf gag grouper interim analysis, using data through
16 2022. These have been prepared to help inform you guys about the
17 condition of the Gulf gag stock, for which catch limits were
18 greatly reduced following the 2022 SEDAR 72 stock assessment, which
19 found gag to be overfished and undergoing overfishing, as of 2019,
20 and so this looks at some of the interim years there between the
21 terminal year of the assessment and now.
22

23 This interim is provided as a health check for the stock, since
24 the catch limits for gag were modified via Amendment 56 in June of
25 2023, but haven't yet been implemented, and so, from a procedural
26 standpoint, it would have just been a little bit chaotic to have
27 the recently in-place interim rule, and then followed by the change
28 in catch limits for Amendment 56, and then potentially another
29 change coming from a successive interim analysis, and it just kind
30 of piles on.
31

32 The SSC should consider the information presented and make any
33 recommendations to the council, as appropriate. Just a reminder
34 to you guys that interim analyses do not change stock status, in
35 terms of like overfished or overfishing condition, and so, Lisa,
36 the floor is yours.
37

38 **DR. AILLOUD:** Thank you. Good morning, everyone. Like Ryan said,
39 today I'm going to present this interim analysis, which is a little
40 bit more of a health check on gag grouper for the Gulf of Mexico.
41 As you all know, SEDAR 72 happened around 2021-2022, and so the
42 terminal year of the assessment was 2019.
43

44 In the assessment model, there were three fishery-independent
45 indices, and two of those are good candidates for a health check,
46 because they represent portions of the populations that are being
47 exploited, and the first one is the Panama City video survey, which
48 covers pretty much ages-zero to three, and the SEAMAP reef fish

1 video survey, which targets slightly older fish, starting at age-
2 three.

3
4 Those two fishery-independent indices are really well -- How would
5 you say it? They are well predicted by the assessment model, and
6 so they are in good agreement with the rest of the assessment data,
7 the age composition, and the trends in catches that are in the
8 stock assessment model.

9
10 They are considered good indices, and then the third index we have
11 is an age-zero index. If you recall, that one actually was updated
12 to 2022, and so it has one more year of updates than the two reef
13 fish video surveys. However, because it only targets age-zero
14 fish, it's not as appropriate for an interim analysis, as there
15 may be some considerable amounts of mortality that happen between
16 age-zero and the recruitment to the fishery.

17
18 The Panama City video survey, as you all know, now the video
19 indices you see combines indices for reef fish in the Gulf.
20 However, for gag grouper, the combined index did not pass through
21 the review, and so we had those separate indices for the Panama
22 City video survey and the SEAMAP video survey, and so, to update
23 these indices, the GFISHER index data was taken and then restricted
24 spatially to match the spatial area that was used in SEDAR 72, and
25 so it's a strict update on those indices used in SEDAR 72, and, in
26 this case, we had data until 2021.

27
28 On the upper-right-hand side, you will see the two indices on top
29 of each other. The blue one is the update, and the red one is the
30 old index from SEDAR 72, and so you can see that there is two
31 additional years, and both fall below the average of the time
32 series, and below kind of a peak recent recruitment in 2019, which
33 is the terminal year of the assessment.

34
35 In terms of area covered, you see the map on the bottom-left for
36 the stations, and, in terms of the fish being targeted, I did put
37 the selectivity curves in the bottom-middle panel here. Ignore
38 the blue line. That's just because I pulled it out of the
39 assessment, but the red line is the one that defines the
40 selectivity by age for that index, and so you see it mostly indexes
41 the younger fish, and then, on the bottom-right-hand side, those
42 are the lengths observed, and a smaller portion of the fish are
43 measured with a stereo camera, and so those are the lengths
44 observed for the last few years.

45
46 There was no -- As you can see, in 2022, there was five fish
47 measured. In 2021, there was eleven fish measured, and so it's
48 not much to go off of, and, you know, it's just not a lot of fish

1 being measured, but you can kind of see the overall selectivity of
2 the index, and also that the index was designed to target age-zero
3 through three, in terms of the habitat that's being targeted.

4
5 The second index is the SEAMAP reef fish video survey, which is
6 shown on the bottom-left panel, and you have the map here showing
7 the spatial extent of that survey, and so it's mostly restricted
8 to the eastern Gulf of Mexico, and that's because there is very
9 few proportion positive in the western Gulf, and that's the same
10 spatial map, again, as was used in SEDAR 72, and so, on the top-
11 right panel, you can see the two indices on top of each other, and
12 you can see that the last two years that were added were pretty
13 much in line with the recent values observed since the low of 2016.

14
15 We do see a slight increase, I guess, from the low of 2016, but
16 we're still below the index overall average for the last two years,
17 and, in terms of selectivity, that survey does target slightly
18 larger fish, and it is, you know, in areas that are higher relief,
19 more offshore, compared to the Panama City survey, and so you can
20 see, on the very bottom-right-hand side, the selectivity curve in
21 red, which gives you an idea of selectivity at-age, and so mostly
22 getting fish starting around age-three, as they are moving offshore
23 to the reef.

24
25 Then the middle histogram just gives you the overall length
26 composition of the fish measured during the study, and there were
27 very, very few fish measured in the two additional years, and so
28 it's better to look at it overall, as an overall selectivity curve
29 for the survey,

30
31 Then, finally, the age-zero index, and we do provide -- We don't
32 really recommend an index for use in an interim analysis, but it
33 is useful to look at the recruitment signals, and so this one, and
34 thankfully this one is actually updated to 2022, and so you do get
35 one extra year of information here, and you can see that, in the
36 years added, there was a higher-than-average recruitment in 2020,
37 which kind of matches up with the higher recruitment from 2016 and
38 2017, and it's about the same magnitude as the index, and then
39 followed by a decrease for 2021 and 2022, which fall in line with
40 the lower index values from 2018 and 2014.

41
42 On average, over 2020 to 2022, we're about in line with what has
43 been observed in the recent past seven years for the age-zero
44 survey, and, on the left-hand side, just a reminder of what the
45 sites look like, and it's a combination of trawl and seine surveys,
46 and there are three surveys that were kind of stitched together
47 that cover different areas and different time scales, but mostly
48 they are all covering seagrass habitat and targeting those age-

1 zero fish, and the index, as a reminder, is also weighted by the
2 seagrass areas, and it's weighted by habitat.

3
4 Overall, with only two additional years of data for the Panama
5 City Lab and the SEAMAP surveys, we didn't have enough data to
6 even do the proper interim analysis, which requires, you know, at
7 least three years, so that there's not a complete overlap with the
8 terminal year, but I do have a few statistics here showing you the
9 percent difference in the index value compared to the terminal
10 year of 2019, just so you can see, because sometimes visually it's
11 hard to see, but, for the Panama City index, you see that both are
12 decreased, from 73 to 85 percent, compared to 2019, whereas, for
13 SEAMAP, 2020 is a 70 percent decrease, but then the 2021 value is
14 slightly above, by 11 percent, the 2019 value.

15
16 Then, if you look at the age-zero survey, you almost have a
17 doubling of the index from 2019 to 2020, and then, however, you
18 halve that index for 2021, compared to 2019, and then, again, it
19 goes down to a 77 percent change from 2019 for 2022.

20
21 I guess, overall, I think we can say that, for the Panama City Lab
22 and the SEAMAP survey, on average, the recent values kind of fall
23 in line with what's been seen over the last seven years, and then
24 the age-zero does seem to have a peak in recruitment in 2020, and
25 that falls in line with the peaks seen in the recent time series
26 for 2016 and 2017, and perhaps that peak will start to appear in
27 the other two surveys, as we get additional years of data, but,
28 for now, they're not being fully selected yet by these surveys,
29 and perhaps Panama City, and so that might account for the little
30 uptick in 2021, but it will be another year before the SEAMAP
31 survey starts to fully capture these fish, and I think that is it,
32 and I will take any questions. Thank you.

33
34 **VICE CHAIRMAN BARBIERI:** Thank you, Lisa. That was a great
35 overview presentation. It was very clear, and I really appreciate
36 you coming to present to the committee, and, as far as framing our
37 discussion, right, this is really not a major action item for the
38 committee, in terms of providing catch level recommendations or
39 stock status for the council, but it's really because the council
40 wanted to have a better idea, you know, a more up-to-date idea, of
41 the condition of the stock.

42
43 Because SEDAR 72 had a terminal year of 2019, right, and we're
44 already in 2023, there were concerns that the assessment results
45 may not be really -- Not that they wouldn't be applicable, but not
46 be reflective of the current reality, in terms of gag abundance,
47 right, that changes since then could have happened, and so they
48 asked the Center to put together this interim analysis, and, since

1 this is a scientific product, right, it comes before the SSC first,
2 for us to evaluate this and then make a recommendation to the
3 council on whether we feel that this is, you know, following
4 standard methodologies and that this is acceptable as scientific
5 information for the council to consider and that we basically give
6 it our blessing to be presented to the council, in terms of
7 informing condition of the stock. With that, I'm going to open
8 for questions, unless there are any other points to be made. No?
9 Okay. So I have Dave Chagaris and then Trevor.

10

11 **DR. CHAGARIS:** Thank you, and so I know that you said that you
12 didn't provide the GFISHER index because it wasn't approved for
13 use during the stock assessment, but, for the purpose of these
14 interim updates, I think it would still be useful to look at not
15 so much the combined index, but I would have liked to have seen
16 the FWC survey, you know, because that's another portion of the
17 West Florida Shelf that isn't covered by these three indices here,
18 and so I'm wondering -- I know you couldn't use the combined index,
19 but did you look at the FWC data alone, from 2010 onward?

20

21 **DR. AILLOUD:** I did not, because the scope of it was restricted to
22 indices that were used in the assessment, but I see your point,
23 but, no, I did not ask for an update for that index.

24

25 **VICE CHAIRMAN BARBIERI:** A follow-up there, Dave, or no?

26

27 **DR. CHAGARIS:** I mean, I would just say, maybe going forward, I
28 think the interim analyses, or these health checks, shouldn't
29 necessarily be restricted to only the data that are in the stock
30 assessment models. If there is other data other there, I think we
31 should probably see it.

32

33 **VICE CHAIRMAN BARBIERI:** Noted. Thank you. Trevor.

34

35 **MR. MONCRIEF:** I agree with Dave on that one, and so Slide 3, the
36 distribution, right, and so it looks like you've kind of got two
37 areas, and so, in every presentation, and everything else, we've
38 kind of gone through this conversation of how the area around
39 Apalachee Bay represents a completely different pressure
40 structure, and kind of fishing regime and everything else, and was
41 there any look at -- Basically, did both of those show the same
42 trends, or are they diverted from one another if you split them
43 apart?

44

45 **DR. AILLOUD:** I don't have the answer for that question, and I'm
46 sorry, because it was never split for the analysis, but I think
47 it's good to look at this in the context and compare to the SEAMAP
48 index, which covers a much wider area, and kind of track that

1 cohort later in life, and you do see a very similar trend between
2 the Panama City survey and the SEAMAP survey, which does give you
3 confidence that, though this area is restricted, it does appear to
4 be in line with the overall trajectory of the population.
5

6 **MR. MONCRIEF:** Yes, and I think, you know, kind of what Dave said
7 and everything else, and you've got one that exists what seems
8 like in the population center of gag, in the highest areas and
9 everything else like that, and so, given the tagging information
10 that we saw, it seems like they kind of sit where they get caught,
11 and they stay in a fairly close home range, and I just wonder if,
12 like as we go through parsing these things out into a little bit
13 different areas, it might give you an idea of how different things
14 were playing out by region or by -- On a more local scale.
15

16 **DR. AILLOUD:** Thank you for that comment.
17

18 **VICE CHAIRMAN BARBIERI:** Trevor, on that point, right, if you look
19 at Slide 5, right, so that's the FWC seagrass juvenile survey,
20 right, combination of trawls and seines that, you know, provides
21 fairly good coverage.
22

23 I mean, that's a different -- It's a little later, but it's -- You
24 know, it's there, and it goes through 2022, and, in my view, that
25 provides, right, that coverage over the center of abundance, and,
26 in terms of reflecting gag recruitment, I mean, that's where the
27 juveniles really are, right, and we maintain the survey, primarily,
28 and Ted Sweitzer I think is on the line, and so, if we have more
29 specific questions, he can kind of try to break it down for us and
30 address any issues, but I think that this provides fairly good
31 coverage, and Lisa explained that this was kind of stitched
32 together, but it's actually to provide that, you know, broad
33 geographic coverage. Katie.
34

35 **DR. SIEGFRIED:** Thanks. I wanted to go back to Dave's comment
36 about looking at things that weren't in the assessment, and then
37 I would also like to ask the chair if my interpretation of what
38 you all need from this is true, and so I will start with the
39 latter. It seems like, because this stock is in a rebuilding plan,
40 and we have sort of delayed advice, due to things like video
41 surveys taking a while to process, it's helpful for this group to
42 say what each year, each year they expect to see from the Science
43 Center and partners, to let them know what is going on in the
44 stock, right, and so this age-zero survey -- We just thought you
45 might want to see it, and it wasn't asked for, and it seems
46 appropriate to show, but there is also potentially a timing issue
47 with the video survey, because of staffing issues.
48

1 I don't know, Lisa, if you want to talk about it, but we couldn't
2 get through 2022, because, you know, by the skin of our teeth
3 basically, and so timing of these interims for you, or health
4 checks for you, is probably important. If you want, you know, the
5 most current data, maybe if we would have waited until February,
6 and we could have seen 2022, but we talked about that with council
7 staff and made an executive decision, you know, that it's good to
8 see it right now, because there is an emergency rule, and there is
9 an amendment going into place and all of that, and so, if you
10 wanted to discuss that, that would be good.

11
12 Back to Dave's comment, and, you know, we've been trying to figure
13 out a way forward with interims that is consistent, and everybody
14 can agree on, and one of the things that I thought was true is
15 that we wouldn't consider things that weren't in the assessment.

16
17 I don't necessarily hold true to that with gag, because there was
18 a whole procedural workshop to look at combining indices,
19 especially the video indices, because of their value in tracking
20 cohort strength, and so I think, in this instance, looking at the
21 Florida data could be useful for next time, but I think, in
22 general, I don't want that to open up a can of worms of looking at
23 data that were excluded by panels or experts or SSC reps for each
24 individual assessment, and so I don't know if Dave wants to speak
25 to that, or if others want to comment, but that was something that
26 I would like to put up for discussion.

27
28 **VICE CHAIRMAN BARBIERI:** Dave, any thoughts on this?

29
30 **DR. CHAGARIS:** Essentially, I mean, this is a health check, and so
31 I don't feel like we necessarily need to be super prescriptive on
32 what they provide us, but, you know, just looking at -- You know,
33 like, if you open up the vermilion snapper interim analysis, where
34 it used all of the combined data, you know, it shows where the FWC
35 data have been collected since 2010, and this interim analysis is
36 just missing that big part of the shelf, and so, I mean, I'm fine
37 if you make, you know, judgment calls on which data to include,
38 that may not have been in the stock assessment.

39
40 Also, I mean, I don't know what the rationale was for not using
41 the combined index at that time. Sometimes indices might be
42 dropped just because they're correlated with other indices, and
43 so, you know, I think just -- I guess all I wanted to say is just,
44 you know, try to give us as complete of a picture as possible, you
45 know, with the data that we have available.

46
47 **VICE CHAIRMAN BARBIERI:** Katie, would you please follow-up on this,
48 and why was the GFISHER not included in SEDAR 72? I mean, give a

1 little bit of that rationale, because I think that would be
2 helpful.

3
4 **DR. SIEGFRIED:** Personally, I would need to look it up, so I don't
5 say the wrong thing, but I bet that Lisa knows it off the top of
6 her head, and so I'm going to put you on the spot, Lisa.

7
8 **DR. AILLOUD:** The combined index was looked at, and the issue that
9 they were having with gag grouper is that, because there's such a
10 strong ontogenetic shift, you know, from inshore to offshore, that
11 the way the standardization was done is it wasn't accounting for
12 a shift, and so it was really hard to define the selectivity of
13 the index, and the recommendation was that there should be kind of
14 an inshore/offshore split for that combined index for gag.
15 Otherwise, we were just kind of, you know, smoothing over those
16 two signals, and so the conclusion of the group was to say, okay,
17 well, we want to combine them, but we need more work for gag
18 grouper and to reconsider it in the future with that
19 inshore/offshore split.

20
21 **VICE CHAIRMAN BARBIERI:** Katie, please, a follow-up.

22
23 **DR. SIEGFRIED:** We had a panel, and that was the last time we had
24 a panel for assessments, and I know Ted and Kevin Thompson were
25 involved in that panel, and I worked with Lisa quite a bit on that
26 decision, because it was a difficult decision to exclude a portion
27 of a combined video index that had been included for the
28 assessment, and so I just wanted to mention that there were a lot
29 of other people involved in that decision, but I appreciate Dave's
30 point, and I just didn't want to open the can of worms for other
31 assessments.

32
33 **VICE CHAIRMAN BARBIERI:** Right, and thank you for that, Katie, and
34 then, in terms of -- Roy.

35
36 **DR. CRABTREE:** Just looking at the figure in front of us, the age-
37 zero surveys, so it looks like we had a pretty good year class in
38 2020, and my guess is that year class would just be hitting the
39 fishery about now, right, and they would be three or four-year-
40 olds now, and didn't we hear, from the gentleman from Crystal
41 River, that they're seeing a lot of fish, and things are doing
42 pretty well, which would be consistent with this?

43
44 I think one of the biggest concerns we have is our ability to
45 constrain the recreational fishery and keep them within their catch
46 limits, and it seems, to me, this survey might be useful, in terms
47 of what deciding what years do you use to get catch rates that you
48 then use into the projections, and, in this case, you know, since

1 we have that good year class back there, it might be worth looking
2 at catch rates when that 2016-2017 cohorts were in the fishery,
3 and using that, because I know, depending on what years you use as
4 your baseline to get the catch rates for them, it could make a lot
5 of difference in how many days you're projected, and so that might
6 be something that this is useful for.

7
8 **VICE CHAIRMAN BARBIERI:** Right, and I agree, but then, if we go
9 up, or we go actually down to the next slide, right, just for us
10 to think about, where the two other surveys, which is a little
11 later, I believe, right, and those are ages zero to three.

12
13 **DR. AILLOUD:** They are zero to three for Panama City and then
14 pretty much three and up for SEAMAP.

15
16 **VICE CHAIRMAN BARBIERI:** Right, and so they show a little bit of
17 a different picture.

18
19 **DR. CRABTREE:** Well, I wonder if that's just because those age-
20 zero fish haven't gotten large enough, and they're not showing up
21 in these, because I think these surveys are looking at somewhat
22 larger fish, right, and so that could be.

23
24 **VICE CHAIRMAN BARBIERI:** To that point, Ryan?

25
26 **MR. RINDONE:** Fish that were showing up in the age-zero index in
27 2016 would be showing up in the fishery in 2019 to 2020, and more
28 on the 2020 side, and so 2017 would be 2021, and so thinking about,
29 you know, fishing during 2020 and 2021, it was improving over say
30 2017 through 2019, and we were seeing more -- Larger numbers of
31 four-year-old females, and, granted, you know, a lot of the harvest
32 is going to be truncated towards that minimum size limit, just by
33 a function of where these fish tend to be caught and recreational
34 fishing pressure in general, and so it would be interesting to
35 kind of keep an eye on it and match it against the pulses in
36 landings.

37
38 **DR. CRABTREE:** Yes, because it seems, to me, that 2020 year class
39 could be showing up in that shallow-water fishery they pursue in
40 September, and it could be showing up right now.

41
42 **VICE CHAIRMAN BARBIERI:** Right. Exactly, and my point about the
43 other surveys is that, you know, then we give an idea of what might
44 be coming behind or not, right, and so does it represent just a
45 pulse, really, of that year class, or is there enough, you know,
46 there over a broader size range, and age range, that would be, you
47 know, significant going through the fishery, but yes. With that,
48 Will.

1
2 **DR. PATTERSON:** Thank you, Luiz. I'm glad this point was raised,
3 because I was thinking something similar. You know, as far as the
4 Panama City trend that you see in the top-left, you know, getting
5 back to Dave Chagaris' point, this only a portion of the West
6 Florida Shelf, you know, the northwest and the Big Bend, and so
7 the Panhandle and the Big Bend, and it misses that important
8 section farther to the south, and so I think the two plots here
9 that are most easily looked at together are the SEAMAP and the
10 age-zero, although SEAMAP is farther out on the shelf, and much
11 larger fish, than the Panama City data typically indexes.

12
13 If you look at the trend in recruitment from the early 2000s, until
14 about 2010, you know, it's mostly positive, or above the mean
15 relative abundance over time, and that translated, in the SEAMAP
16 data, a lag of a few years to an increasing trend in the relative
17 abundance of the larger adults offshore, but it took several years
18 of relatively strong recruitment to have that increasing trend
19 that we see in the SEAMAP index.

20
21 To Roy's point about hearing testimony from fishermen about strong
22 recruitment, and lots of small, young fish on the shelf right now,
23 we've heard that too, and not just in this meeting, but in our
24 region here on the central-west Florida shelf, and that certainly
25 is not inconsistent with those reports of that age-zero pulse in
26 2020, but, although it seems like a pretty strong recruitment
27 relative to recent years, it's not that strong of a recruitment
28 relative to the long-term trend.

29
30 To Roy's point about trying to protect year classes, and not just
31 mowing down relatively strong year classes, at least in these data,
32 there doesn't appear to be another similarly strong -- Even though
33 it's moderately strong, it's fairly positive above the long-term
34 trend, and 2021 and 2022 don't appear to be strong, and, in fact,
35 they appear to be among the weaker years in the time series.

36
37 Even if you have really low release mortality, but you're throwing
38 back ten-times as many fish as you land, your realized kill in the
39 fishery is twice what the quota is for the recreational sector,
40 and, you know, we talked about that yesterday, and so important
41 things to consider when trying to manage this fishery.

42
43 **VICE CHAIRMAN BARBIERI:** Will, great points, and thank you. Any
44 other thoughts or comments from the committee? Tom Frazer.

45
46 **DR. FRAZER:** I just was, again, thinking about what the council
47 might expect, and I'm going to let C.J. weigh-in, but, I mean,
48 it's such an important fishery, right, and so I think that the

1 intent is to at least kind of get an update on a regular basis
2 annually, to see where the fishery is going, and it's interesting,
3 because, based on the conversation and the input that we heard
4 yesterday, there does appear to be, you know, a strong year class,
5 perhaps, this year, but it's not captured, because we don't have
6 the 2023 data, and so maybe the timing is an element here, and
7 maybe you want to see this update in February, so you can actually
8 get a better handle on what that might look like, but, again,
9 you're not going to respond, I don't think, right, from an SSC
10 perspective, and make changes in catch advice that are going to be
11 implemented immediately, right, and it will take a little bit of
12 time, but that's not what this index is really designed for, right,
13 and it's to look out several years, to make sure that you're in
14 fact on the right track, right, and whether or not you need to
15 have some type of an intervention, because things have gone south,
16 perhaps, right, and so my personal opinion is that I would like to
17 see it every year.

18
19 I think most people on the council would, but maybe this group
20 should think about the timing of when that interim analysis is
21 provided, and, to Dave's point, I think, again, and Katie's as
22 well, there are elements that went into the assessment, right, and
23 those perhaps are your standard types of things that you look at,
24 but I think you should never exclude that ancillary information
25 that allows the body to look at it, and so those are, again, you
26 know, maybe the GFISHER survey, or something else that might go in
27 there, and it just all adds to the discussion, right, and, again,
28 to think about where do we need to be going, should we hold the
29 line, et cetera, et cetera, and so, anyway, C.J.

30
31 **DR. SWEETMAN:** I agree, and I was going to say just about everything
32 that you said there, Tom, and so I have nothing else to add.

33
34 **VICE CHAIRMAN BARBIERI:** Well, if I may -- If I may just also say
35 a few things here about GFISHER and annual -- You know, potentially
36 annual interim analysis, right, and Katie, you know, already
37 brought up that point earlier, that the issue of reading this video
38 is very time consuming, right, and so you need to have a lot of
39 standardization in this process, and it takes quite a bit of
40 training and staff time to actually just sit there, and, following
41 a standardized protocol, read those videos in a way that the
42 results are scientifically valid and statistically robust, right,
43 for us to consider.

44
45 You know, Katie is right that this last year, I mean, I guess 2023,
46 the whole of 2023 and late 2022, we are struggling, a little bit,
47 in terms of everything else that's going on, right, with staffing
48 and the costs of everything, to be able to keep up, right, with

1 the latest and greatest. We know that the council wanted to have
2 a terminal year of 2022 for this analysis, and, of course, the
3 closer to current reality the better, but we just could not meet
4 that deadline, and there was a discussion internally, and we
5 decided that this is not going to be possible.

6
7 We can't provide all of the other products that we're trying to
8 get ready for all the other assessments and have this index, you
9 know, provided for GFISHER with all the video up-to-date, and so
10 timing, Tom, is right, and timing is going to be key, in terms of
11 when, right, this index update would come up, and then, you know,
12 we have to see how we consider terminal years of data for analysis,
13 and we're trying to up our capacity, to try and keep up with this,
14 but it's a lot, right, and so this is something, you know, that
15 perhaps we can discuss later this year, at maybe our next meeting
16 or the following one, and I will ask Ted to work with the Center
17 and kind of develop some kind of an evaluation, right, of what is
18 possible, realistically speaking, between the two organizations to
19 kind of generate that GFISHER index on time, you know, so we can
20 have this interim analysis done.

21
22 You know, I just wanted to bring it up, that, in terms of realities,
23 pragmatically speaking, it is a concern that we are trying to
24 address. Katie.

25
26 **DR. SIEGFRIED:** Thank you, Mr. Chair. Yes, and we have a GFISHER
27 review at the end of November that I'm participating in as an end
28 user of the product, and it will be a great time to talk about
29 getting all of the cooperators together and producing indices and
30 what the schedule should be and where the index can be housed,
31 because, if this is used by the SSC and council as a health check,
32 it makes sense to just post it on a website, and you all can look
33 at it at your leisure, instead of taking a lot of time to coordinate
34 getting all of that together each time, and so I think that would
35 be a great way to go for this species that you want to see annual
36 updates.

37
38 **VICE CHAIRMAN BARBIERI:** Yes, and I agree completely, Katie. Thank
39 you. Dave.

40
41 **DR. CHAGARIS:** Just an observation, and, I mean, the upside is
42 that it looks like these indices are tracking pretty well, and so
43 there's definitely a lot of information here for us, and then just
44 an observation on the age-zero index. You know, the last two
45 years, there's been -- From 2020 to 2021, and then 2022, are two
46 consecutive years where the index was lower, and that has only
47 happened, you know, once previously, and that was during that 2005
48 -- Between 2005 and 2010.

1
2 If we're thinking about, you know, what the fishery might -- You
3 know, if we're focusing on this 2020 strong year class, you know,
4 also what might be coming after that could be worse, and so we
5 don't -- I think it would be wise to try to chase, you know, year
6 classes, especially when we see two declining years in a row.

7
8 You know, just to remind folks, from the red tide mortality
9 perspective, there was pretty -- You know, increases in mortality
10 for both 2021 to 2022 on those age-zeroes estimated by the
11 ecosystem model, and so there could be, you know, something going
12 on there.

13
14 **VICE CHAIRMAN BARBIERI:** Right. Exactly, and then another point
15 that Roy made, right, is that this is a strong year class of 2020,
16 and it may actually be, right, what we have seen now in the fishery,
17 and, because of that, what to expect, in terms of potential, you
18 know, overages, because, if there is more fish in the water, you
19 know, catch rates are going to be higher, and people are going to
20 be catching more, and then whatever comes behind, that may not be
21 there to -- Will.

22
23 **DR. PATTERSON:** Thank you, Luiz. To the question about the time
24 lag here with the video, I mean, if you're looking at the Panama
25 City trend, I think Katie just said that they were almost able to
26 get 2022 data for our meeting today, which, you know, is less than
27 a year lag from when the data were collected, and that's pretty
28 strong, given what is involved in analyzing the data, especially
29 if you're getting size composition data from stereo cameras.

30
31 You know, that does take time, but it's actually not terribly
32 delayed, given -- You know, I remember in the 2000s, and the 2010s,
33 when there were some years that the SEAMAP data weren't even
34 analyzed, right, and we have some gaps early on, for things like
35 red snapper, because they just didn't have the personnel to do it,
36 and so there seems -- You know, through the GFISHER program, and
37 maybe through some NOAA-Fisheries-dedicated funding to Panama
38 City, there do seem to be more resources available now to
39 accomplish that.

40
41 Another thing that could be possible in the review that Katie is
42 talking about is to prioritize certain species, right, and gag
43 aren't terribly abundant, or well represented, among all the fish
44 seen in those video samples, like for SEAMAP, and so, if you could
45 have a first cut to go through and just count the gag, that's
46 oftentimes much more expedient than trying to categorize the
47 complete community structure that you see.

48

1 Back to the issue of strong versus weak year classes, and what
2 happened potentially in 2020 and whether these other indices are
3 seeing that or not seeing that, or do they match the perceptions
4 that we hear from people that are on the water much more often
5 than the folks on the panel are, I think it's important to put
6 this in context.

7
8 You know, if the perceived uptick in abundance, at least in the
9 fishery, and not in the grass beds of the age-zero fish from 2023,
10 but if the perceived uptick in abundance of small, young fish in
11 the fishery that are just recruiting to the recreational landings
12 is that, you know, you have this strong year class in 2020, you
13 know, historically, it's not that strong of a year class, and it's
14 just above the mean.

15
16 Our conversation yesterday, a fair amount of it, was talking about
17 recruitment to basically age-twelve, to get more males in the
18 population, and so, if that's truly what is limiting this
19 population, is having males being less than 5 percent, then, you
20 know, we have to kind of tap the brakes a little bit about what we
21 perceive as a strong year class, because it's not really a strong
22 year class for gag at age-three. It's a strong year class for gag
23 as a teenager, and so there's a real lag here in what needs to be
24 done management-wise to recover the stock.

25
26 **VICE CHAIRMAN BARBIERI:** Good points, Will, and just one -- I don't
27 want to belabor this issue, in terms of the data processing and
28 timeliness of data processing, but just to also reassure the
29 committee that the GFISHER project involves a component of
30 automation, right, and so there is an artificial intelligence
31 company that is under contract now to integrate video reading,
32 right, through fish ID and quantification of that.

33
34 I mean, it's still in the early stages of development, you know,
35 training the software and getting things to work, and some progress
36 has been made, and the idea is that, if everything works out, at
37 least we can chop off, you know, the bulk of the work that, you
38 know, is now accomplished by people having to really watch these
39 videos and count and measure fish, and so hopefully that will
40 progress. Tom Frazer. You are our council liaison for the SSC,
41 and so feel free to speak up whenever.

42
43 **DR. FRAZER:** Thanks, Luiz. I just wanted to take advantage of
44 some of the expertise in the room, and thinking about some of the
45 questions that were raised yesterday in the series of
46 presentations, and as it relates to Will's comment here, and the
47 specific comment is the index value for the age-zero fish, right,
48 and a strong -- Perceived as a relatively strong recruitment event,

1 perhaps, in 2020.

2

3 To Will's point, it's not exceptionally strong, in the grand scheme
4 of things, and what it's also not -- You know, when we look at
5 recruitment variations, or based on that index, we're not looking
6 at orders of magnitude differences, and so Sue provided a really
7 nice presentation yesterday that talked about this idea of, you
8 know, male-female ratios and the potential for sperm limitations
9 and things of that nature, and there's not -- I mean, when I think
10 of sperm limitation in a population, I go to like blue crabs in
11 the Chesapeake Bay, or something like that, and I don't know what
12 the range in recruitment might look like as a consequence of sperm
13 limitation.

14

15 Are we talking about an order of magnitude difference, and are
16 these data potentially consistent or inconsistent with this notion
17 of sperm limitation at the population level, and I don't have the
18 answer to that, but maybe I can engage Will and Sue in that
19 conversation, and does the relatively narrow range in the
20 recruitment index -- You know, is it inconsistent with this idea
21 of sperm limitation at the population level?

22

23 **VICE CHAIRMAN BARBIERI:** Sue, are you -- Can you approach the
24 podium and present at least your perspective?

25

26 **DR. LOWERRE-BARBIERI:** Sure, and so -- Well, a couple of things.
27 One of the things that I didn't say yesterday, and I should have,
28 is so it does look like gag, in terms of their mating strategy --
29 It's not like they're just releasing sperm and eggs in the water,
30 like Nassau grouper, and they're actually -- Their spawning is
31 pairs. You wouldn't fertilize any eggs with that little sperm if
32 you didn't do it that way.

33

34 This is something that, in terms of if you look at male GSI,
35 measures of testes, you can tell whether you're a pair spawner or
36 not, and it looks like gag are, and so two things.

37

38 If you just look at the fecundity, and we have fecundity-at-age
39 for gag, and, if you look at that number of eggs, even if you took
40 into consideration skip spawning, there's no way you have enough
41 males out there to fertilize all those eggs, and it just isn't
42 there.

43

44 In terms of recruitment, like we all know that's why spawner-
45 recruitment curves are so non-informative, and so we have a lot of
46 things that impact the number of age-zeroes you see, but the only
47 thing that really matters, in terms of reproductive success, is
48 whether those fish survive to actually reproduce, right, and so

1 that's the definition of reproductive success, is you survive to
2 the maturation age.

3
4 Gag is very complicated, because you have females maturing, you
5 know, at around age-five, and then you have males not maturing,
6 because they have to change sex, until about age-ten, and so I do
7 think -- Again, you know, I want to go back to this question of -
8 - I think, when we get hung up on sperm limitation, maybe that's
9 not the way we should be thinking about it. We should be thinking
10 about reproductive success and reproductive value with age.

11
12 It's quite clear, with gag, that those older-age fish are
13 incredibly important to the reproductive success, and so you can
14 look at this trend, and look at those years that were below
15 average, right, and say, yes, but we actually had pretty low sex
16 ratios, male sex ratios, even before that, which was pointed out
17 by Doug I think yesterday, and I would have to say that you really
18 don't want to be looking at age-zero trends.

19
20 One of the things we saw when we looked at birth years of the
21 adults, and that's what you really want to be looking at, right,
22 and so we saw this trend in age-six fish in the Madison-Swanson
23 study in the first year, females, and they disappeared by the next
24 year, because they actually moved away from the MPA and they were
25 captured, and so I think we really have to be thinking about what
26 are we protecting, in terms of the spawning population in gag, and
27 not putting too much emphasis on year classes or age-zero indices.

28
29 These do seem to track pretty well, when you go from that to three
30 years old, but you need to get -- A three-year-old is not a mature
31 fish, right, and so you get about 50 percent mature at about age-
32 five or so, and so I hope that answers your question. It's a
33 complicated issue, but --

34
35 **DR. FRAZER:** Yes, I think that it does, and it's super helpful.
36 Again, I'm just trying to put it all together in a way that allows
37 us to make sense and make some informed decisions.

38
39 **DR. LOWERRE-BARBIERI:** Right, and I think it's really complicated,
40 but I think going back to just the very simple idea of reproductive
41 value with age, regardless of whether you're a male or a female,
42 and, obviously, it goes up as you get older with gag, and that's
43 really important, and that's why they are sequential
44 hermaphrodites, because reproductive success increases as a male,
45 at those older ages, than it does as a female, and so, by
46 definition, that means that reproductive value jumps up
47 significantly for those males, regardless of whether we can figure
48 out if there are enough sperm out there, but I can tell you, in

1 terms of looking at the sperm versus the eggs, there aren't, at 2
2 percent male.

3
4 **VICE CHAIRMAN BARBIERI:** If you can stay up there for a second,
5 Sue, because we have also Lisa online, right, and, between the two
6 of you, we can get, perhaps, a picture of the virgin biomass. I
7 mean, this is something that is a product of the assessment, right,
8 and so the virgin biomass, the virgin recruitment, were estimated
9 in the assessment, but there was also an estimate of what the sex
10 ratio in a virgin population would be, right, and was that the 30
11 percent that you're talking about?

12
13 **DR. LOWERRE-BARBIERI:** I think that was 32, and is that right,
14 Lisa?

15
16 **DR. AILLOUD:** Yes, that's correct, because SS estimates a virgin
17 age composition on top of having that virgin SSB estimate, and, if
18 you apply the transition function, the hermaphrodite function,
19 onto that age composition, that's where you get the idea of 32
20 percent.

21
22 **VICE CHAIRMAN BARBIERI:** Right, and so 32 percent is our estimate,
23 right, as uncertain as that might be, but that is our estimate of
24 what the sex ratios would be, percent male, under virgin
25 conditions, right?

26
27 **DR. AILLOUD:** Correct.

28
29 **VICE CHAIRMAN BARBIERI:** Then the Hood paper -- That was data from
30 when, Peter, from the 1970s?

31
32 **MR. HOOD:** Yes, and it was from the late 1970s, and it was sampled
33 from the fishery, and so it was, you know, fish that were caught
34 and landed at the dock.

35
36 **VICE CHAIRMAN BARBIERI:** Right, and so, at that point, right, the
37 sex ratio, if I remember correctly, was 17 percent, and so 17
38 percent from fish from the 1970s, and, Lisa, what was the estimate
39 of the sex ratio that came out of SEDAR 72?

40
41 **DR. AILLOUD:** Let me pull that up. I don't know off the top of my
42 head.

43
44 **DR. SIEGFRIED:** I have it pulled up, Lisa. Hold on.

45
46 **DR. AILLOUD:** It should be in the assessment report.

47
48 **DR. SIEGFRIED:** Luiz, from the 1970s?

1
2 **VICE CHAIRMAN BARBIERI:** No.
3
4 **DR. SIEGFRIED:** Sorry.
5
6 **VICE CHAIRMAN BARBIERI:** The terminal year, right, of what we got
7 from the --
8
9 **DR. GREGORY:** I believe it was 2 percent.
10
11 **DR. AILLOUD:** Yes.
12
13 **VICE CHAIRMAN BARBIERI:** Right. 2 percent, and so I just want to
14 make the point here that we don't know, right, process-wise,
15 whether there is sperm limitation or not. We just don't, right,
16 but we --
17
18 **DR. LOWERRE-BARBIERI:** We will probably never have the data to
19 know that, and I just want to share.
20
21 **VICE CHAIRMAN BARBIERI:** Yes, and that's good to know, but, at the
22 same time, what I'm looking at here -- We can say, okay, we have
23 an estimate, right, from the assessment, that estimates what the
24 -- It provides an estimate of what the sex ratio would be under
25 virgin condition, and we have a late 1970s estimate, and then we
26 have the latest at 2 percent, right, and so, I mean, imagine if
27 this was not hermaphroditic, and so we had a gonochoristic species,
28 right, that was down with a sex ratio of only 2 percent males.
29
30 Even if we don't count for sperm limitation, there is something
31 here, and it might be related to stock juvenescence, as you said,
32 right, and, if the age composition of males is proportionally
33 older, and we have quite a bit of stock juvenescence, then we are
34 not actually letting them age to the point where we have, you know,
35 what would be expected to be the appropriate portion of males,
36 right, and so, again, another statistic that you mentioned
37 yesterday, and Lisa is on the phone, is what would be -- What was
38 the age composition, right, and so the age composition of the
39 landings?
40
41 **DR. LOWERRE-BARBIERI:** That was actually -- Skyler had looked at
42 that for SEDAR 33, and I can't remember, Lisa, if we did this for
43 72 as well, but she looked at the age at the 90th quantile at MSY
44 for SEDAR 33, and it was age-four, and you don't really get any
45 males at all until at least age-six, and you get 50 percent at
46 age-ten, and so you have a problem. You have a problem with making
47 males, if that's the level of age truncation that's occurring.
48

1 I do want to share, and I'm happy to share this paper with people,
2 but there's a paper that just recently came out that's talking
3 about how to model protection of BOFFs and age-structure, instead
4 of just doing biomass or egg production, and it's basically the
5 same concept, and so looking at what is the age structure that you
6 would need, as opposed to just biomass, and maybe that's something
7 that would be helpful for gag in the future, but I think that the
8 -- I think people are getting -- It's easy to get hung up on the
9 concept of sperm limitation, right, and whether we can prove that.

10
11 That was my point about Nassau grouper, and so they can actually
12 swim around and get those eggs and look at fertilization rates,
13 and I was at this hermaphrodite workshop, gosh, maybe ten years
14 ago, and they were suggesting that maybe that would be possible
15 for any other species, and I was thinking that have you looked at
16 any of these other species, and like that's never going to happen,
17 and, if they're pair spawners, you never get the eggs and sperm.

18
19 We strip-spawned fish in the field and couldn't get them to
20 fertilize the eggs. As far as I know, when they have tried to
21 collect eggs, gag eggs, they haven't been able to. I know Chris
22 Koenig tried to, and he couldn't, and I think that Ernst's project
23 had a hard time getting gag eggs, and so we're not going to prove
24 sperm limitation, but we can easily prove that, if you don't have
25 50 percent male until age-ten, and your average age in the fishery
26 is age-four or five, and the stock assessment predicts, based on
27 those age comps, 2 percent males, we have a problem.

28
29 We have to have the males and the females to spawn, and, especially
30 in a case where they're pair spawning, it's that much more
31 important. You don't have these clouds of sperm, like you would
32 with red drum or seatrout, anything that has sperm competition.
33 You just don't have that amount of sperm, and I can't believe that
34 I'm talking on the record about the amount of sperm you have.

35
36 **VICE CHAIRMAN BARBIERI:** Well, thank you, Sue. That was enough.
37 Roy. Then I have Will and Doug.

38
39 **DR. CRABTREE:** The 30 percent number of the virgin, that's not
40 what we're trying to get back to though, and so do you know, Katie
41 or Lisa, at the BMSY, the rebuilding target, what would the sex
42 ratio be if we successfully rebuild the stock, because that's what
43 we're trying to achieve, and it's presumably less than 30 percent
44 males, but I don't know.

45
46 Then that feeds into the whole issue of the choosing the reference
47 point, because that would tend to scale that up and down, although
48 it seems, to me, there's a great deal of uncertainty in all of

1 this, because the stock-recruitment curve is poorly known, and so
2 the --

3

4 **VICE CHAIRMAN BARBIERI:** Katie, please.

5

6 **DR. SIEGFRIED:** I am not sure if Lisa has that off the top of her
7 head, and I can find it in the report here in just a minute.

8

9 **VICE CHAIRMAN BARBIERI:** While Katie looks for that, I'm going to
10 go to Will Patterson.

11

12 **DR. PATTERSON:** Thank you, Luiz. I'm curious, and that 32 percent
13 that came out of the recent assessment, and I just want to make
14 sure that that's in numbers, in abundance, and not in biomass, and
15 is that correct?

16

17 **VICE CHAIRMAN BARBIERI:** I couldn't hear your question properly,
18 Will. Can you repeat it, please?

19

20 **DR. PATTERSON:** My question was to make sure that the 32 percent
21 was in numbers and not in biomass.

22

23 **DR. AILLOUD:** Yes, that's correct.

24

25 **VICE CHAIRMAN BARBIERI:** So that was Lisa Ailloud, Will, saying
26 that, yes, that's correct, that it was in numbers and not in
27 biomass.

28

29 **DR. PATTERSON:** Thank you.

30

31 **VICE CHAIRMAN BARBIERI:** Doug.

32

33 **MR. GREGORY:** Thank you, Mr. Chair. I wanted to -- I agree with
34 Sue that we're getting too caught up with sperm limitation, because
35 it's a hypothesis with no empirical evidence, when you look at the
36 recruitment that we were getting all throughout the 1990s, when we
37 were supposedly at even lower levels of sex ratio for males.

38

39 It was interesting to note that, in the unfished area, Sue found
40 a 10 percent ratio, and the other thing is the Hood paper, and the
41 historical papers -- Unless somebody can do some data mining, as
42 Sue's data shows, it depends on what area you sample, what season
43 you sample, as to what likely ratio you will get. Hood references
44 a paper, Maclaren and Smith in 1964, that found a 6 to 7 percent
45 male ratio, and so I caution anyone from taking what Hood found
46 and the gentleman on the South Atlantic posts they've found a
47 similar 15 to 17 percent ratio and claiming that that is the
48 normal.

1
2 Without doing some data mining, and so, if you're sampling in an
3 area where there's more females than males, you're going to get a
4 different sex ratio than if you're sampling in the spawning
5 aggregation, and so, to me, like Sue said, it's a moot point, and
6 we're really trying to rebuild the population overall, and there's
7 been no proof of sperm limitation. I think that's just been a
8 hypothesis that we've lived with for thirty or forty years. Thank
9 you.

10
11 **VICE CHAIRMAN BARBIERI:** Thank you for that, Doug. Good points.
12 Dr. Simmons, would you like to address the committee?

13
14 **EXECUTIVE DIRECTOR SIMMONS:** Thank you, Mr. Chair, and so I was
15 wondering if we could go to Slide 3. I just -- I wasn't sure how
16 many stations this includes, but it just struck me that the sample
17 size is really low of the number of fish that were encountered,
18 and I think that might have to do with the gear, perhaps, based on
19 the talks we had yesterday with the videos and them being camera
20 shy and stuff.

21
22 They looked at eleven fish, and, I mean, I think I counted more
23 than eleven gag when I went scalloping in the grass beds off of
24 Crystal River, and so that was just surprising to me, and I guess,
25 in thinking big picture, long-term, with workload, as we work
26 through these different indices, maybe we want to figure out if we
27 want to keep pursuing some of these, as far as workload and things
28 like that, because it just -- It's one area, and I don't know how
29 many sites were sampled, but that just seemed quite low to me, and
30 so, I guess, does the Science Center have some type of minimum,
31 you know, sample to inform an index that they feel they're
32 confident in moving forward, and that's just a more broad question,
33 as we look at these different indices of abundance.

34
35 **VICE CHAIRMAN BARBIERI:** Katie, to that point, please?

36
37 **DR. SIEGFRIED:** I wonder if Lisa could go ahead and address what's
38 in the slide, because it's not total sample size, and it's
39 different, and I will let her speak to it.

40
41 **DR. AILLOUD:** Thank you, Katie, and thank you, Carrie. This is
42 actually the sample sizes of fish that were measured by the stereo
43 cameras, and so it's not the number of fish they encountered. With
44 gag grouper, they have a hard time getting measurements, and so I
45 can pull up the actual -- It's a lot more samples that come into
46 the index, and a lot of stations, and so I can pull those up and
47 communicate that to you all.

48

1 **EXECUTIVE DIRECTOR SIMMONS:** Yes, and I think that would be good,
2 and then, if you wouldn't mind, like in the future, if you could
3 add the number of stations that were sampled for these different
4 surveys, and I think that's helpful in each year, so we can kind
5 of get a better idea of what's happening every year. Thanks.

6
7 **DR. AILLOUD:** Yes, absolutely, and I think -- Let me check now,
8 and I believe it's in the appendix of the interim analysis report,
9 but I will try to pull that up and get back to you all.

10
11 **VICE CHAIRMAN BARBIERI:** All right. Thank you, Lisa. Jess, do we
12 have -- Sue, did you have something to say?

13
14 **DR. LOWERRE-BARBIERI:** Yes, and I just wanted to answer Roy's
15 question about what, at the target SPR, what do we think the sex
16 ratio is going to be, and so, with any SPR, there's this whole
17 issue of can you accurately estimate virgin anything, right,
18 because you're taking a very-fished stock and trying to say what
19 would happen to a virgin stock, without taking into consideration
20 changes in life history and how those compensate with increased
21 mortality, but, that said, we did -- As I mentioned, Claudia, in
22 SS3, and working with Lisa, looking at what would be the sex ratio,
23 and, at 30 percent SPR, it was estimated that it would be 15
24 percent. With 40 percent SPR, it was estimated to be 20 percent.

25
26 Then I did just want to mention, to Doug Gregory's point, and so,
27 just to clarify, I think the best measure of sex ratio here is
28 from the stock assessment and the measure of the A50.

29
30 We have looked at thousands of fish now, and I think we have a
31 very good estimate of the A50, and the stock assessment has huge
32 numbers of samples, in terms of age composition, and, if they
33 predict 2 percent -- We did not find anything empirically that
34 suggested that 2 percent was wrong, and the stock assessment
35 predicts 2 percent, and I think that's the strongest data we have
36 on what we think might be going on, and there's not a population
37 out there with 2 percent male as a healthy population.

38
39 When I talked about having a conversation with Clay, and this is
40 in our paper, I went back and looked at ungulates, right, and so
41 elks and things like that, that have one dominant male and females,
42 to see what their natural sex ratios are, and they're never 2
43 percent. There is a great collection of papers on sex ratios,
44 and, again, I'm happy to share that, and 2 percent male is not a
45 healthy population, by any standard, in any other species,
46 terrestrial or marine.

47
48 **VICE CHAIRMAN BARBIERI:** Okay. Thank you for that, Sue, that

1 clarification, and then the sample size issue I thought was great
2 that that came up as well, because that, you know, helped, I think,
3 reassure the committee that the data here are actually quite
4 representative for the areas that the survey has covered. Katie,
5 did you have a point there?
6

7 **DR. SIEGFRIED:** Just to add to that, and Lisa pulled up the sample
8 sizes, and we will add it to -- I can see how that's confusing,
9 and we'll add it to the slide and update it, but the most recent
10 year is 292 samples, and so it's significantly more, and I guess
11 gag just don't like to turn in the way that the stereo video
12 cameras can get the two dots in the right places, and it's very
13 annoying.
14

15 Then I just wanted to add to Sue's point as well, and I looked
16 back at Lisa's results for sex ratio in the 1970s, to compare it
17 to Hood and their results, and it's 15.3 percent estimated in the
18 model, which is really nicely correlated with what you all found,
19 and so just to add to what the model is predicting.
20

21 **VICE CHAIRMAN BARBIERI:** Thank you for that, Katie. All right,
22 folks. Well, I think it's time for us to kind of complete this
23 item and take the action. I mean, we had good discussion, and we
24 are trying to provide, you know, the council with some
25 recommendations regarding the use of this index, or this interim
26 analysis, you know, with all the indices, for gag, as a health
27 check, and so I am actually looking for a motion from the committee
28 to that effect.
29

30 **MR. RINDONE:** If you're not making any catch limit recommendations,
31 then there's nothing operational for this that you're recommending
32 to the council, and you can do that, and there's certainly no harm
33 in saying that it's consistent or whatnot, but I guess, just trying
34 to think about it in terms of what your expectation is that the
35 council will do with the motions that you make.
36

37 **VICE CHAIRMAN BARBIERI:** Right, and let me clarify that point,
38 and, again, I tried to make this clear in the beginning, right,
39 and the council requested this analysis of the Science Center,
40 right, and the council wanted to look at this.
41

42 It is a scientific product, and so, before it goes and gets
43 presented to the council, the council asked the SSC to look at
44 this and say thumbs-up or thumbs-down, and, I mean, do we believe
45 that this is reflective of gag abundance and we can actually trust
46 the general outcome of this analysis, or do you feel that the
47 uncertainty is too high, that the trends are confounded, or in
48 disagreement, and we actually do not recommend that they use this,

1 and so I'm saying that a motion doesn't have to be a motion, right,
2 and it can be something that we put in our report, but I think I'm
3 going to need something to present to the council that
4 unequivocally explains how we felt, so that, when I actually
5 present it, I cannot just speak for myself, but for the committee
6 as a whole, of how you feel about the appropriateness of this
7 analysis as representative of the current status. I will let you
8 decide that, and do you want to -- Are you volunteering to make
9 one?

10

11 **DR. KILBORN:** So I guess it's not common for us to use only two
12 years of data and then to refer back to the terminal year as the
13 reference, and so -- And it sounds like we can wait a few more
14 months and get an update to this analysis in February, and so I
15 feel like maybe the recommendation should be something like let's
16 revisit this again, when we have those data, before we decide
17 whether or not it's the best science available.

18

19 **MR. RINDONE:** So we won't be able to revisit this in February of
20 2024. There's just too many things on the plate to be able to
21 accomplish that, and so we'll need to -- The council can work with
22 the Science Center to plan for -- Based on using a February
23 timeline, it would be February of 2025, unless there's something
24 that changes dynamically with the ability to read these video data
25 between now and then that allows us to review it perhaps next
26 September.

27

28 **DR. KILBORN:** I just want to voice a little bit of frustration
29 that we're -- We never standardize our processes, and we're very
30 flexible about, you know, how much data is good in this decision,
31 versus this other decision, and so I just get uncomfortable when
32 we do this, when, you know, we break protocol, and it just makes
33 me uncomfortable.

34

35 **VICE CHAIRMAN BARBIERI:** Maybe I am misunderstanding here, and
36 clarify it for us, Katie, because this is not an interim analysis
37 that is generating management advice, in the sense of ABC, right,
38 and there is no reference period, really, right, and I know that
39 that's on the presentation there, to help us identify since the
40 last time we've seen it, but we are looking at the entire time
41 series, the way I understand this, right, and we are looking at
42 the fluctuations over time, because the index is continuous over
43 time, and it's a monitoring program, for that reason, right, and
44 I think that Lisa put those reference years there for perspective
45 since the last time that we saw this index, as this was integrated
46 into the assessment, and that was the terminal year of the
47 assessment, but we are looking at this -- I am looking at this
48 from a holistic perspective. Katie.

1
2 **DR. SIEGFRIED:** We're still developing protocols for the way
3 interims are requested and presented, and gag was a different
4 beast, because the council wanted 2022, and we sort of went back
5 and forth with what we could provide, and so it was more of a
6 figuring out how fast we could get something together.

7
8 The thing that we would be breaking protocol on, which is the thing
9 that I asked at the beginning, was introducing a time series that
10 wasn't actually used in the assessment, and I'm not opposed to
11 that now, and, if that's something that people wanted to have
12 Florida produce separately, that's a completely different
13 question, but that, in my mind, would be breaking protocol, as
14 opposed to what we've provided today.

15
16 **MR. RINDONE:** Just to be clear, Mr. Chair, we don't have a full
17 protocol for the types of data that will be included in an interim
18 analysis, and like -- I think Dave went to get coffee. Dave, bring
19 some coffee back.

20
21 As Dr. Chagaris had talked about, you know, we should look at the
22 things that are apropos, given the data that were used in the past,
23 and so then we can look at the FWRI video data, just to try to
24 make sure we're getting a good representation in the same style of
25 index, you know, as we're looking at, and so we --

26
27 But we purposefully don't have a formal protocol on the types of
28 data that might be considered, because, as we've practiced with
29 the Science Center, and with looking at the interim analyses, we've
30 gone from red grouper, where we were only looking at the NMFS
31 bottom longline survey, to now we've had conversations about
32 considerations about let's also include the length composition
33 information, which the Science Center was able to put in here for
34 us, and let's look at any indices that line up with or are
35 complementary to the representative index of abundance that's
36 mostly being considered.

37
38 We're trying to learn and adapt to the process as we go, and it's
39 going to be different for every single species, because, for some
40 species, like cobia, we don't have anything. For some species,
41 like gag and red snapper, we have comparatively voluminous amounts
42 of information that we could look at, and so it will require
43 flexibility on behalf of the SSC, the Science Center, and the
44 council in order to continue using this tool.

45
46 **VICE CHAIRMAN BARBIERI:** Thank you for that, and I know I have a
47 queue, but, since Dr. Ailloud has raised her hand, I will let her
48 speak. Lisa.

1
2 **DR. AILLOUD:** I just wanted to clarify that the reason why I didn't
3 show kind of the, quote, unquote, standard interim analysis with
4 the three and five-year averages, the reference period, and the
5 recent period is because we just don't have enough years. We would
6 need at least 2022 to make that comparison. Otherwise, the
7 reference period and the recent period are the exact same, and so
8 there's no contrast, and so I put in that reference year -- You
9 know, the change compared to 2019, and that was just to help you,
10 you know, visually assess where those points fall in the line, and
11 so there was no intention to say those are the adjustments, and
12 it's just the best I could do with the data I had, and so just to
13 give you context on why I did that.

14
15 **VICE CHAIRMAN BARBIERI:** Thank you for that, Lisa. That's super
16 helpful, and it's greatly appreciated. Dr. Saul.

17
18 **DR. SAUL:** Thank you, Mr. Chair. Just a sort of procedural question
19 that maybe gets to something that Roy mentioned a bit ago, and so,
20 if we're -- This maybe be for Dr. Sweetman or Dr. Frazer, but, if
21 we're -- I guess what is the next step?

22
23 If we make some sort of a motion, right, saying, to the council,
24 this is the best available information, but there's no reason to
25 set, you know, catch limits, right, or the catch limits are not
26 going to be set at this time, what does that set the council up to
27 do? Is that a prelude to then talk about other additional
28 policies? You know, is that like the next step here? Does my
29 question make sense?

30
31 **VICE CHAIRMAN BARBIERI:** It does, and I understand the reason for
32 the question, Steve, but the reality is, right, and I think we
33 need to look at this from the most practical way possible,
34 products, scientific products, analytical products, to go before
35 the council come before this committee, right, for review, because
36 the council entrusts us, right, with that responsibility to review
37 analyses that, if we say we have no concerns with this analysis,
38 as presented, that's sufficient, right, to say we don't have --
39 Then they can proceed, and that's what I'm saying.

40
41 I mean, we don't have to overstep, and they can proceed in
42 whichever way they see appropriate, and they can take the actions
43 that they see appropriate, but they can look at this and say there
44 were no concerns that were raised by the SSC regarding the
45 validity, the scientific validity, of this analysis, if that helps
46 clarify it, Steve.

47
48 **DR. SAUL:** Yes, and so it's a peer-review checkbox, essentially.

1 Thank you.

2

3 **VICE CHAIRMAN BARBIERI:** To that point, C.J., and then Roy.

4

5 **DR. SWEETMAN:** Thank you, Mr. Chair, and this is the first time
6 that we've seen an interim analysis for gag grouper, and it's
7 something that's been requested by the council, and so, I mean,
8 this doesn't necessarily set up additional management actions
9 along these lines, and we're, obviously, working on a kind of
10 separate framework action on some of those other items there, but,
11 yes, this is the first time that the council would have seen this
12 interim analysis, and we're very interested, obviously, in what's
13 going on with the gag stock, and so kind of -- Even though there's
14 not any direct management that will come from this, we're just
15 kind of checking that off, that the SSC kind of approves of this.

16

17 **VICE CHAIRMAN BARBIERI:** Roy, please.

18

19 **DR. CRABTREE:** Just to kind of wind this up, I think we can say
20 that the SSC reviewed this analysis, and it was appropriate and
21 well done, and we don't have any concerns with it. We're not
22 recommending any changes to catch levels based on this, and the
23 results of the past two years, which are updated and included in
24 this, fall within the range of what we've seen in recent years,
25 and then the council can make their decisions about bag limits and
26 all the other things, but, as far as I can tell, that's about as
27 far as we can go with this.

28

29 **VICE CHAIRMAN BARBIERI:** To Steve's previous point, I think this
30 is really appropriate, and, I mean, that's what is appropriate,
31 and I think you're using the term, and that's what I should have
32 used, right, is this is a peer-review checkbox. This is a peer-
33 reviewed product to go before the council and say, is this
34 scientifically robust, yes or no, and, if you have concerns, let
35 me know what they are. Will, please.

36

37 **DR. PATTERSON:** Thanks. I agree with Roy's past statement,
38 previous statement, but I'm not sure we need a motion on that. I
39 think we can capture it in the report, and people can read the
40 report and make sure it captures the consensus of the discussion.

41

42 The other thing that I would add, sort of as an addendum to what
43 Roy just said, is, in looking at the trends in the indices, and
44 especially the more recent years that weren't included in the
45 previous assessment, it doesn't change my perception that the stock
46 is not in a good place.

47

48 **VICE CHAIRMAN BARBIERI:** Yes, and thank you for that, Will, because

1 that really helps clarify things, and I was just giving an eye-
2 check here to our savant typist, who is almost typing in real-time
3 what's being said here, and if he caught, right, at least the gist
4 of Roy's statement, and then as supplemented by Will, and then I
5 absolutely agree, and we don't need really a formal motion for
6 this. I have Dave Griffith and then Steve Saul.

7
8 **DR. GRIFFITH:** Thank you, Mr. Chair. I just wonder -- On the
9 agenda, it says there is some Fishermen Feedback, and is that in
10 our package somewhere, or where is that?

11
12 **MR. RINDONE:** No, and that's -- We're not going to present that at
13 this time. The Fishermen Feedback iteration that we have for that
14 was what was presented to you guys the last time, when SEDAR 72
15 was reviewed, and so I think having it on there was just -- That's
16 not going to be presented.

17
18 **VICE CHAIRMAN BARBIERI:** Steve.

19
20 **DR. SAUL:** Thank you, Mr. Chair, and so, to Will's point, are we
21 -- From the procedural perspective, are we allowed to add a
22 sentence in there that says essentially what Will said, that, you
23 know, the trends look like this population is not -- That it's not
24 happy at the moment, so to speak.

25
26 **VICE CHAIRMAN BARBIERI:** Well, if it's the consensus of the
27 committee, right, and I don't see any reason for that not to be
28 added as a statement there, unless there are concerns from the
29 committee to add that statement. Would anybody have any concern,
30 or opposition, to that statement to be added to our report, as
31 part of the recommendation coming out of this agenda item? Seeing
32 none --

33
34 **MR. RINDONE:** So I've qualified it that the stock remained in an
35 imperiled condition, as of 2021, and so because of -- Especially
36 for the public's understanding of the kinds of things that you
37 communicate to the council and the Science Center communicates to
38 you, and I think it's important that it's understood that this
39 sentiment is only valid through this point in time, and anything
40 that happened between that point in time and now is unaccounted
41 for this in this statement.

42
43 **MR. MONCRIEF:** "Imperiled" has a little bit of a different
44 connotation, in my mind.

45
46 **MR. RINDONE:** I am open to edits. We could say the stock status
47 remains unchanged from SEDAR 72.

1 **VICE CHAIRMAN BARBIERI:** Right, and so let me ask here that -- I
2 think we've got the gist, right, of where we need to go with this,
3 and we can wordsmith as we write our report, and all of us are
4 going to receive the draft report for us to wordsmith, right, to
5 the degree necessary, and I think we can do it at that point, but
6 I really appreciate a lot of discussion on this item. It's
7 something that the council requested, and we felt very strongly
8 that we needed to do, you know, our due diligence here and review
9 in detail.

10
11 We have time for moving on to our next presentation, Agenda Item
12 Number IX, which is a Review of the Vermilion Snapper Interim
13 Analysis. Dr. Francesca Forrestal is here in-person, and thank
14 you, Francesca, for coming, and, whenever you're ready, Mr.
15 Rindone, if you could read the scope of work for this item, and
16 Francesca can get started on the presentation.

17
18 **REVIEW: VERMILION SNAPPER INTERIM ANALYSIS**

19
20 **MR. RINDONE:** All right, and so you guys are going to hear a
21 presentation from Francesca on the 2023 Gulf vermilion snapper
22 interim analysis, using data through 2022, and these data have
23 been prepared to help inform you about the general condition of
24 the vermilion stock, which was estimated to be healthy, as of 2017,
25 by the SEDAR 67 stock assessment. This interim analysis is
26 intended to be suitable for modifying catch advice. You guys
27 should consider the information presented and make any
28 recommendations to the council, as appropriate.

29
30 **DR. FRANCESCA FORRESTAL:** Good morning. I'm very happy to be here.
31 I will be presenting the interim analysis for vermilion snapper.
32 This species, or stock, was last assessed for SEDAR 67, and the
33 terminal year was 2017, and so we're adjusting the catch advice
34 using an index-based harvest control rule and a three or five-year
35 moving average of the GFISHER survey index of abundance, and, as
36 Dr. Ailloud referenced earlier, this interim analysis uses a recent
37 mean index and a reference mean index, and the option is either to
38 use a three or five-year moving average for both the recent mean
39 index as well as the reference mean index.

40
41 The important thing with interim analyses is you need the reference
42 year, and this is the year immediately preceding the terminal year
43 of the assessment, and so vermilion was a 2017 terminal year, and
44 so the reference year for this analysis is 2018, and this creates
45 a little bit of complication for vermilion, because the 2018 ABC
46 was calculated in the CHTS currency. However, we're now working
47 off of the FES currency, and so I have presented both values, to
48 kind of keep it in context from what was done previously, but what

1 is now being recommended.

2
3 How was the 2018 CHTS currency converted into FES? It's not as
4 straightforward as applying a conversion ratio, and so the interim
5 analysis does require the reference ABC from the 2018 year. As I
6 said, SEDAR 67 had a terminal year of 2017, and so the 2018 ABC
7 values were only available from the SEDAR 45 projections, which
8 was the assessment before SEDAR 67. SEDAR 45 used the CHTS
9 currency for both the assessment and the projections.

10
11 During the SEDAR 67 assessment, the SEDAR 45 model projections
12 were updated to these FES units to facilitate comparisons of
13 continuity between the model, and also to put into context what
14 the projections were going forward for SEDAR 67, and so these
15 conversion from SEDAR 45 projections to the FES units yielded an
16 OFL value of 6,760,000 pounds whole weight.

17
18 For this interim analysis, Dr. Smith very kindly updated these
19 projections from SEDAR 45 and reran them using the SEDAR 45
20 accepted ABC approach, which is to project the optimal, and so the
21 OY, at 75 percent of F SPR 30 percent. Then the ABC was set as
22 the average of 2017 through 2021, and this resulted in an ABC value
23 of 5,880,000 pounds whole weight. As a comparison, for reference,
24 the SEDAR 67 projections yielded an ABC of 7,770,000 pounds whole
25 weight.

26
27 This slide is essentially an overview of what I just said, but it
28 is not the most intuitive way of looking at these values of interim
29 analysis, and so I think it does help to maybe look at it from a
30 different direction, and so the 2018 through 2023 ABC was set using
31 the constant catch projection for SEDAR 45. The projections used
32 the average catches from 2017 through 2021.

33
34 This gave an ABC of 3.1 million pounds whole weight in the CHTS
35 currency, and so, for this assessment, the ACL equals the ABC.
36 These projections were then updated to get the FES currency, and
37 so, going forward, we're using the ABC value from 2018 in FES,
38 which is 5.88 million pounds whole weight.

39
40 We used GFISHER to update this catch advice, and, in SEDAR 67,
41 what was available was the combined video index, but now it is
42 being updated as GFISHER, and so this index uses data from the
43 historical survey footprint, and the survey sites are delineated
44 in the three different historical regions, and so the green -- We
45 have FWRI, and the blue is Pascagoula, and then the red is the
46 Panama City, and each of these surveys have a different start date,
47 and so the earliest one is from 1993, from Pascagoula, and then
48 the most recent is the FWRI, which began in 2010.

1
2 These surveys were all conducted independently through 2019, and
3 then, beginning in 2020, these survey efforts were combined under
4 GFISHER, and there is also a background document that shows exactly
5 how this index was standardized.
6

7 This is the updated index, and so, on the left, we have the combined
8 index, as compared to the GFISHER, and you will note that the
9 terminal year of 2017 has been extended out to 2021 for GFISHER.
10 The figure on the right has the standardized index compared to the
11 nominal, as well as the associated confidence limits, and, again,
12 it ends in 2021.
13

14 If you look at the overall index trend, there has been an
15 increasing trend to about 2016, and then, in the most recent years,
16 it is quite variable, and so it decreases down to 2019 and then
17 increases back to actually 2018, and so you can see, in the most
18 recent years, there's a lot of interannual variability.
19

20 If we use this index, we have a three-year moving average or a
21 five-year moving average, and the black lines are the scaled index
22 for GFISHER, and then the solid red is the reference time period,
23 and so the reference time period is the three years surrounding
24 the terminal year of the last assessment, and then the dashed --
25 The dotted line is the recent year index, and so the recent year
26 index has been higher than what the reference year was for the
27 three-year moving average.
28

29 It's the opposite case if you look at the five-year moving average,
30 and so the reference index five-year moving average is higher than
31 what it seen in the more recent years, and then these are reflected
32 in the values in the table above. The ratio between these two
33 values is used, and so there is a higher ratio for the three-year
34 moving average, as opposed to the five-year moving average, and so
35 then, applying to the 2018 ABC reference catch, in FES, the three-
36 year moving average yields a slightly higher of 6.712 million
37 pounds whole weight, whereas the five-year moving average is a
38 reduction of 5.049 million pounds whole weight.
39

40 The most recent -- The final rule for 2023 sets the ACL at 0.75 of
41 the ABC, and so it is different from what was proposed in SEDAR
42 45, which was the ACL equals the ABC, and this has a lower value
43 than the current catch advice, which was obtained through SEDAR
44 67, which is 7.270 million pounds whole weight in FES.
45

46 For context, the current 2023 ACL monitoring is below, and so, as
47 of last week, this was actually listed as CHTS, but now it has
48 been updated to FES, and so this is also why this version of the

1 presentation is different than what is in the briefing book, but
2 we will be sending this updated version out.

3
4 Then the final take-away is that this stock, as noted, is not
5 overfished nor undergoing overfishing, and so the current ABC is
6 taken from the average of 2021 through 2025, and the catches are
7 declining, or the ABC is declining, as we project out into the
8 future, and so this is very much in line with what we are seeing
9 with this interim analysis.

10
11 The major caveat with this, of course, is that the index is only
12 updated through 2021, and there are -- There is already ABC for
13 2023, and so it is difficult to say that this should be used into
14 the future, when we already have something going into the future,
15 but it does provide not a health check, but just a confirmation of
16 where we thought we would be and where we are currently now, and
17 I understand this -- If there are any questions, I'm very happy to
18 go through how values were computed and for any kind of clarity,
19 but thank you, Chair.

20
21 **VICE CHAIRMAN BARBIERI:** Thank you, Dr. Forrestal, for that
22 detailed presentation, and I think we needed that level of detail,
23 and it's good to have those slides up there, because we're going
24 to probably have questions, you know, about some of those steps
25 there, but Mr. Rindone is not here right now, and maybe Dr. Simmons
26 can help us with this, and I would just like to understand -- I
27 mean, if we have already catch advice in place, and I think those
28 were based on projections coming out of the assessment. Was this
29 interim analysis a request from the council for a refresh, or --
30 Dr. Simmons.

31
32 **EXECUTIVE DIRECTOR SIMMONS:** Thank you, Mr. Chair. I think we
33 originally tried to have this on the SEDAR schedule, and it took
34 us a while to get these new numbers implemented, and I think they
35 were just implemented in, what, May of this year, in the FES
36 currency, and so we didn't realize that it was going to take that
37 long when we were planning so far out, and it was recommended,
38 during the Steering Committee, that we try to use an interim
39 analysis approach for this, and I believe this is the first time
40 we've done this for vermilion snapper, and so I think it's just
41 looking at the information that was presented, the index that was
42 put together, the methodology, and then looking at where we are
43 currently and seeing if we need to make any adjustments to the
44 catch advice. I think that's what we're looking for.

45
46 **VICE CHAIRMAN BARBIERI:** Okay. Thank you. Yes, that helps. All
47 right. Any questions from the committee? Trevor.

48

1 **MR. MONCRIEF:** I just have a quick question about the index, and
2 so increasing variability in 2016, and think about the behavior of
3 the species and everything else, right, and you normally don't see
4 small numbers of vermilion snapper usually in large concentrations
5 on given reefs, and was there a look into kind of what's causing
6 that large amount of variability, or that shift over the last few
7 years, and I'm trying to think if there is an increase in the
8 proportion of zeroes and extreme values, or is it more a spread
9 across the mean, if that makes any sense.

10
11 **DR. FORRESTAL:** I am not exactly sure where that variability is
12 coming from. In looking at the background presentation, that has
13 the sample sizes across the three different historical survey
14 regions, I do note that 2020 was -- Obviously, there were
15 logistical constraints, and we're all very aware of that, but I
16 cannot speak to the actual causality of it, but I don't know if
17 Katie has any --

18
19 **DR. SIEGFRIED:** Is it okay if I speak, Mr. Chair?

20
21 **VICE CHAIRMAN BARBIERI:** Absolutely. Yes, Katie, please.

22
23 **DR. SIEGFRIED:** I think that Trevor and Francesca covered most of
24 the issues there, and I was just looking back at the sample sizes
25 by survey, and how Florida really had to be the one that kept up
26 the sample sizes, especially during 2020, and then the transition
27 from each individual survey to GFISHER relied on everybody sort of
28 coming back onboard in 2021 and 2022, but I think Trevor's point
29 of this is a schooling species, and, if it's a video survey, you're
30 going to get these pulses of seeing more, depending on which year
31 and when they sample, where they sample, and where the fish decided
32 to go that year.

33
34 I'm actually -- I think the variability at the end is probably
35 more accurate than a really smooth line for video survey, for a
36 species like this, and I think, in general though, the trend is
37 increasing. At the end, we have a leveling-off, because of the
38 variability, but that's just my thoughts.

39
40 **VICE CHAIRMAN BARBIERI:** Thank you for that, Katie. Will.

41
42 **DR. PATTERSON:** Thank you, Luiz. I guess there's two potential
43 things here for us to comment on. One is about BSIA relative to
44 this analysis, and then the other, as Dr. Simmons just mentioned,
45 is whether we would recommend to the council that they make a
46 change in management, and we've been on the record talking about
47 the uncertainty with this interim approach to trying to adjust --
48 The interim analysis approach and trying to adjust catch advice.

1
2 For me, on page 6, there's two pieces of information that I think
3 are most important, when I look at this, and one is page 6, and
4 showing the confidence limits around the combined video index I
5 think is very telling, because it illustrates the uncertainty in
6 what we're seeing here, and so trying to adjust catch advice up or
7 down, using this level of uncertainty, without actually redoing an
8 assessment, or updating an assessment, even in the more
9 minimalistic ways, as Dave Chagaris has advocated in previous
10 meetings, I think is really difficult, given the uncertainty here.

11
12 You know, the lines fitted as mean trends that Francesca showed in
13 a later slide, they're not significantly different from one
14 another, given the level of uncertainty that you see here, and so
15 which one would you pick?

16
17 The second piece of information that I find most valuable here is
18 the estimate that the current spawning stock biomass is 3.5 times
19 the MSST, which would make it 1.75 times the SSB at MSY, and so,
20 given where the stock is estimated to be, and this level of
21 uncertainty, I'm not sure how we would recommend any change, up or
22 down, in catch advice.

23
24 **VICE CHAIRMAN BARBIERI:** Thank you, Will. Great point. Let me
25 insert my own thoughts here, and, I mean, I think the -- I will go
26 you then, Sean, but I think that one of the, you know, the thoughts
27 for us to have here is that SEDAR -- I mean, I think this is a
28 tradeoff, right, that we are talking about. SEDAR 67 had a
29 terminal year of 2017, and so the current catch advice is based -
30 - You know, we are at the end of our projection period, right, for
31 that assessment, that came out of that assessment, right, and so
32 we know that those projections get -- Not just projections and
33 general uncertainty, but, as you go forward from the terminal year
34 of the assessment, they tend to become even more uncertain, right,
35 and the uncertainty is not linear.

36
37 Then, you know, the other side of this is that, if we are trying
38 to refresh management advice, you know, based on an index, that we
39 really don't have an index that seems to be consistent enough, or
40 has the attributes that we feel of stability for a species of this
41 behavior, right, schooling behavior, to be truly representative of
42 stock abundance, and so it's like, you know, six to one or half-
43 a-dozen to the other, in terms of uncertainty, and I just wanted
44 to bring this up, because I agree with Will that this has major
45 uncertainty, and I just want to bring up the point that, if we
46 stay the course, and just continue with the management advice that
47 was provided through the projections, we are already at an
48 expected, you know, higher level of uncertainty, through that

1 process as well. Ryan, you had a point?

2

3 **MR. RINDONE:** Yes, and thank you. Just to note to the committee
4 that the council set the ACL for vermilion at 75 percent of the
5 ABC, and the ABC last time, I think, was 7.27 million pounds, and
6 so the ACL is like 5.45 million pounds, and so it's set quite a
7 bit below the catch advice that was offered by the SSC the last
8 time.

9

10 **VICE CHAIRMAN BARBIERI:** Thank you for that point, Ryan. Sean
11 Powers.

12

13 **DR. POWERS:** Thank you, and I just wanted to add that, you know,
14 my lab, in association with Marine Resources in Alabama, also has
15 a big video survey that we do that's not included in this, because
16 the methodology is a little different, but it's remarkable, and
17 we're showing the same trend, this increase over the last ten
18 years, but the last two years more or less leveling out, and it
19 also has much variability as this, and probably, as we mentioned,
20 because it's a schooling species, but it's interesting that a
21 separate index that we have also shows almost the exact same trend.

22

23 I mean, the fact that they're leveling off, and I know we're
24 talking about mean, and that means, to me, that I probably wouldn't
25 change any catch advice, but, again, that's -- That's for us to
26 discuss more fully, but I did have a question for Ryan. What are
27 the landings? Have we caught, or come close, to the ACL?

28

29 **VICE CHAIRMAN BARBIERI:** He is looking now, Sean.

30

31 **MR. RINDONE:** Let's see. The last time that we were estimated to
32 have exceeded the ACL was 2018, and 102.6 percent of the ACL was
33 landed. Since then, 2019 was 84 percent, and 60.7 percent in 2020,
34 83 percent in 2021, and -- Peter, if you're taking notes for the
35 ACL monitoring webpage, sometimes there's a break, it seems between
36 the historical information, the previous year's information, and
37 the current information. They're all on different links, and it
38 confounds navigation a little, in my singular opinion. For 2022,
39 it looks like 70.7 percent of the ACL, Sean, and so we've been
40 under what we had.

41

42 The follow-up catch advice from SEDAR 67 constituted an increase,
43 and I think the way that it was described to us by Matt Smith was
44 these things are like bees, and the stock appeared to be doing
45 quite well, and was healthy, but we haven't been landing the ACL.

46

47 **DR. POWERS:** So, that, combined with the index that we -- The
48 GFISHER index flattening, I mean, my personal opinion is that we

1 shouldn't change catch advice, but thank you.

2

3 **VICE CHAIRMAN BARBIERI:** Thank you, Sean. Very good points, and
4 good discussion. I guess one other question I would like to ask,
5 real quickly, Ryan, is, if we look at the SEDAR schedule, when is
6 vermilion scheduled to be updated? Is it on the schedule?

7

8 **MR. RINDONE:** I need a recording of like Jeopardy music to play
9 while I --

10

11 **VICE CHAIRMAN BARBIERI:** Katie knows.

12

13 **DR. SIEGFRIED:** It's not scheduled.

14

15 **MR. RINDONE:** So we don't have it on here right now, and we
16 certainly could debate where to put it. If you guys want to take
17 a look at the SEDAR schedule, I can send that to Jess.

18

19 **VICE CHAIRMAN BARBIERI:** Yes, please, and then Katie.

20

21 **DR. SIEGFRIED:** Thank you. Actually, from everything I'm hearing,
22 this is a very consistent story. I understand Will's concern about
23 the confidence intervals, but, you know, as Carrie stated, this
24 was put on the schedule as an interim instead of an update, but
25 the main signal that we're getting in the assessment is the index,
26 and, on the next slide, what Francesca showed here, in the red
27 boxes, is what we normally recommend when a stock is not overfished
28 and not undergoing overfishing so much, as Will said, and it's a
29 ramp-down from, okay, you can fish a lot more, because of -- You
30 can't do any overfishing, but you could fish a lot more, until we
31 get down to that SSB over SSB F SPR 30.

32

33 You can see that's declining in the third column, as the yield
34 declines in the last column, and we're actually getting to a point
35 where we're very close, in our interim analyses, to what the
36 projections were for the SEDAR 67. Everything that's being shown
37 is very consistent, even if there's uncertainty, and, if the --
38 The numbers that Ryan just read off, you know, the ACL is met, and
39 then it's slightly not met, and slightly not met, and the index is
40 leveling off, and so all of the signals coincide.

41

42 Everything is consistent, and I think this is actually a really
43 good opportunity say, okay, what would the projections have said,
44 and then you can't use the projections in perpetuity without doing
45 an assessment, but this interim is very consistent with what the
46 assessment put forward in those projections, and so I'm not as
47 concerned as Will about the uncertainty in that index. I don't
48 know that doing another assessment would give you any more

1 information, and it would take up a whole slot of your time.

2
3 **VICE CHAIRMAN BARBIERI:** Thank you for that, Katie, and, Carrie,
4 if you stand there, because I'm going to ask you to -- If there's
5 any point that you want to make relative to that, but my -- I think
6 that Will's impression here coincided with mine, right, and that
7 is I forgot, right, that we had decided to not conduct an update
8 on this assessment, and, for some stocks, we're not going to be
9 able to conduct, you know, full model-based assessments for every
10 stock, right, and it's just not possible, and so we're going to
11 have to add some efficiencies here into this process and go with
12 less resource-intensive, you know, methodologies here, because
13 we're got to take care of this entire stock, right, and suite of
14 stocks.

15
16 In this case, that was my mistake, and I misremembered, right, the
17 fact that we had made a decision to have this, and that's what you
18 said, Dr. Simmons, and that was spot-on, and I just didn't catch
19 it in that sense, right, that this was actually an interim analysis
20 being provided by the Center, but as part of the SEDAR schedule,
21 as a way to substitute for another analysis, because, in this case,
22 we did not feel that that was necessary. I think that helps
23 clarify a lot. Dave Chagaris.

24
25 **DR. CHAGARIS:** I just had a question, and I'm a little bit confused
26 on Slide 8, the ACL monitoring tables, and I apologize if this was
27 explained previously, but so the ACL went up, from 3.1 to 5.4
28 million pounds, with the final rule, but the total landings
29 basically stayed at the same level, and are those also converted
30 to FES units? I am confused on that. They are? Okay. Were
31 they done with the same conversion ratios?

32
33 **VICE CHAIRMAN BARBIERI:** Peter, do you know? Do you that info, in
34 terms of monitoring ACLs, right, and so that table there, at the
35 bottom of that slide, is from the ACL monitoring site?

36
37 **MR. HOOD:** If you could say what the question is again, and I was
38 actually informing our staff about Ryan's suggestion about these
39 pages, and so I wasn't quite listening as hard as I should.

40
41 **DR. CHAGARIS:** I mean, it's a simple question. You know, the
42 change from the CHTS currency in the ACL went from 3.1 to 5.4
43 million pounds, but the total landings seem to stay at the same
44 level in there, and so one of them changed, but the other one
45 didn't change nearly as much, and I would expect there to be a
46 common conversion ratio.

47
48 **MR. HOOD:** Well, I mean, so what shows up in those tables -- I

1 mean, basically, we're taking what the Science Center is reporting
2 to us, and is reporting within whatever units, you know, we're
3 measuring the ACL in, and so, you know, we're getting stuff as
4 FES, but we're still using things as CHTS, and they're converting
5 those to us. In fact, in some cases, we're actually still using
6 MRFSS, but, you know, we report what they provide us.

7
8 **VICE CHAIRMAN BARBIERI:** But the question, Dave's question, I think
9 was are the landings -- Have the landings there been converted to
10 FES units as well?

11
12 **MR. HOOD:** On our page, we're just sticking with whatever units
13 the ACL is in, so that we have an apples-to-apples comparison, and
14 so, you know, if the ACL is in CHTS, then the landings we're
15 reporting are in CHTS units.

16
17 **VICE CHAIRMAN BARBIERI:** Okay. Katie.

18
19 **DR. SIEGFRIED:** I think we caused a little bit of confusion here,
20 because Francesca and I were arguing, as much as she and I argue
21 about anything, about whether they were monitored in FES, because
22 the council staff looked at the original request and said, oh no,
23 you need to give it to us in FES, and she said they updated the
24 website, but it's pretty obvious that the recreational catches
25 have not changed, and so they can't possibly -- The ACL monitoring
26 file from the Center has not been updated yet, and so we apologize
27 for that, and let's just ignore that post from 9/25/2023 and focus
28 on above, because that's relative to the other years that Ryan had
29 read.

30
31 **MR. RINDONE:** We had asked that the 9/25/2023 -- That it be added
32 in there, because the current ACL is set in FES, and so that you
33 guys could see that, and so that's what is codified on the books
34 right now, and that's what will be monitored and measured against
35 and all of that, and so that was the reason why we wanted you guys
36 to see it, not only in the currency commensurate with the last
37 assessment, but commensurate with what's legally on the books now.

38
39 **VICE CHAIRMAN BARBIERI:** Right, but then what was on this slide,
40 right, created a little bit of confusion, and it's understandable,
41 and those things happen, and, Peter, by the way, thank you for --
42 I didn't mean to cut you off with that clarification, and I didn't
43 mean to put you on the spot, right, but it was just one of those
44 things that was like we had a question, and I was like, oh my gosh,
45 we have a Regional Office person here who deals with that stuff,
46 and so my apologies there. Then I will go to Will Patterson.

47
48 **DR. PATTERSON:** Peter and Katie answered my question. Thanks.

1
2 **VICE CHAIRMAN BARBIERI:** Okay. Thank you. Tom, did you have
3 another point?
4

5 **DR. FRAZER:** No, and I think Katie and Peter answered it as well.
6 I mean, the important thing here is, right, that, over time, when
7 you look at the harvest, right, in ACL terms, that it's been below
8 the harvest.
9

10 **VICE CHAIRMAN BARBIERI:** Right and that the information on that
11 upper part -- I mean, the table, right, on the upper part of this
12 slide is correct. Any additional -- David.
13

14 **DR. GRIFFITH:** Thank you, Mr. Chair, and this might be irrelevant
15 to this particular discussion, but, when I was doing the research
16 on the IFQ program, a lot of people were saying, after 2007, when
17 they implemented the red snapper IFQ program, that people were
18 going to shift to vermilion snapper, and they were going to start
19 fishing it really heavily, and the information that's been
20 presented here today suggests that that just didn't happen, and I
21 was wondering if other people had heard that and, you know, whether
22 they agreed with it, or other fishermen were saying that kind of
23 thing, and, like I said, it might be irrelevant to what we're
24 talking about right now, but I just thought I would raise it.
25 Thank you.
26

27 **VICE CHAIRMAN BARBIERI:** Thank you, David. Then, Jess, would you
28 please advance the slides to -- That one. This is another question
29 that I had. The projections there, Table 2, those are from SEDAR
30 67, right, going through 2025, and so, here, we are providing --
31 We are giving the opportunity to refresh and update management
32 advice with more recent information, in this case not a full
33 assessment, but an interim analysis, right, to update the
34 management advice, but do we have similar projections, or how does
35 that work, in terms of, if we provide management advice now, is
36 that constant next year and then the year after, unless we have
37 vermilion snapper back on the schedule, right, and so the
38 management advice that we provide today, if we decide to provide
39 something different than what is on the board, how long is that
40 going to be there for? Do we know?
41

42 **MR. RINDONE:** Until changed.
43

44 **VICE CHAIRMAN BARBIERI:** Until changed, and so, instead of
45 projections, we just provide a management advice, catch advice,
46 now, and that stays until we have another interim analysis
47 conducted.
48

1 **MR. RINDONE:** Right, which we can request from the Science Center
2 next year, in a few years, you know, whatever is germane to the
3 committee's sentiment.

4
5 **VICE CHAIRMAN BARBIERI:** Right. Thank you. Okay. After all of
6 this discussion and clarifications, and many thanks to all of you,
7 because, you know, this was not easy to understand, and I'm glad
8 that you, you know, put up with us and all the questions and
9 clarifications, and it's really greatly appreciated.

10
11 We have there management advice that is being provided through
12 this analysis, you know, updated in FES currency, and so the
13 decision here is whether we want to accept this analysis as a valid
14 update, right, to an interim analysis of the previous management
15 advice that we provided before, right, and then, two, I believe we
16 are supposed to provide management advice using FES currency, and
17 so, in that case, we have the decision to make on whether we want
18 to use the three-year average or the five-year average. Francesca,
19 those are the decision points, right, that we need to address?

20
21 **DR. FORRESTAL:** Yes, and that's correct.

22
23 **VICE CHAIRMAN BARBIERI:** Okay. Katie, please.

24
25 **DR. SIEGFRIED:** I don't want to throw a wrench in, but, if anybody
26 has done the quick math, you can see a four-year average is leave
27 it alone, and it's one, and so I think something that council staff
28 and I have talked about is sort of how long to let something
29 decline before you act, and this one is flat right now, and it
30 looks like -- I mean, I pulled up the presentation that I gave in
31 July about how to decide on three versus five, and I can go through
32 it, but I'm sure you all remember it, and it's how noisy the index
33 is, how much you want to follow the index, what the life history
34 of the species is.

35
36 They're not these, because these are not doing well, and they're
37 more like rabbits, right, and so you can follow all of that
38 through, and basically look at the three and five-year average,
39 but those are arbitrary values that were offered before, and so I
40 think it doesn't need to stick to three to five, and I think you
41 could take into account sort of the trajectory of the stock.

42
43 **VICE CHAIRMAN BARBIERI:** Roy.

44
45 **DR. CRABTREE:** We used five last time?

46
47 **VICE CHAIRMAN BARBIERI:** We did five last time. Thank you, Katie,
48 for that clarification, because I think that was super helpful,

1 and, yes, Roy, and we used five, and that's my recollection, that
2 we decided to use five last time, because of the uncertainty, and
3 we discussed that, you know, if this was to refresh management
4 advice and be more reflective of current conditions, we were
5 thinking about using just the more recent years, but then, because
6 that was noisier, we decided to go with a more stable management
7 advice that was the five-year moving average. Will, did you raise
8 your hand there? Doug Gregory.

9
10 **MR. GREGORY:** Thank you, Mr. Chair. I must have missed something
11 in the discussion of the previous slide. I came away, from what
12 Peter said, with the impression that the ACL was decided in CHTS,
13 and it's being monitored in CHTS. If that is true, shouldn't the
14 interim analysis remain in CHTS? That's one question.

15
16 The other thing that struck me is can we develop an explanation as
17 to why the landings are only half of the ACL, and, you know, on
18 one hand, you can say, well, it's overfished, and we don't think
19 that, and, on the other hand, it's being underfished, and do we
20 know why it's being underfished? Is it that red snapper is more
21 highly targeted? What David said about effort shifting from the
22 IFQ, that might have occurred early on, but maybe it's not
23 happening -- It's obviously not happening now.

24
25 I could see somebody on the council asking, well, why are the
26 landings so much lower than what they're capable of, and so that's
27 the two issues I had, and one was shouldn't the interim units be
28 the same as the ACL units, or do I have it totally confused? Thank
29 you.

30
31 **VICE CHAIRMAN BARBIERI:** No, and I think those are very good
32 questions, Doug, and Peter is coming to the podium to address those
33 questions.

34
35 **MR. HOOD:** So we had a framework action that the rulemaking was
36 completed in the spring, and I think the new ACL became effective
37 in May of this year, and so it went from CHTS to FES, and then
38 Mike Larkin had jumped into a telephone booth, and he hopefully
39 will come out as Superman, and is trying to investigate whether or
40 not, you know, the landings that we have here are in fact -- Now
41 that I've sort of looked at this table, have we misreported them
42 in CHTS, and should we be looking for FES values, and so I think
43 we'll have this thing fixed, or at least be able to give you an
44 answer, hopefully, later today.

45
46 **MR. GREGORY:** Thank you, and so we're operating in FES, and I
47 apologize for the --

48

1 **VICE CHAIRMAN BARBIERI:** It make take a while for Mike to come
2 back with that answer, because, if he's looking for a telephone
3 booth these days to change into Superman, this might take a while,
4 Peter, right?

5

6 **MR. HOOD:** Yes, that's true, and I don't know, and maybe he can
7 find a revolving door or something like that, and I'm not sure.

8

9 **VICE CHAIRMAN BARBIERI:** That might be easier. Okay, and so we
10 have clear that this is actually now being used with FES currency,
11 right, and Doug's other questions were related to do we have any
12 indication of why the fishery is not meeting its quota, and it's
13 not landing the ACL? Francesca.

14

15 **DR. FORRESTAL:** The reason is because the stock is healthy, and so
16 the catches are above what we want to be, you know, with the ideal
17 MSY, if you have the current SSB above the -- If you look at the
18 reference points, it is above one, and so the stock can handle
19 larger catches, but, just because it can, it doesn't mean that
20 people are going to be out there catching all of them, and so you
21 are going to eventually get to that one, but, in order to do that,
22 you have to actually -- The catches are going to decrease, just
23 because the stock is above MSY, or SSB, and so it's so healthy,
24 and it's a little counterintuitive, but it is a good thing.

25

26 **VICE CHAIRMAN BARBIERI:** Right, and so this is one of those
27 situations where we're fishing down to MSY, and so -- Trevor, do
28 you have a motion there for us?

29

30 **MR. MONCRIEF:** No, and I'm going to leave the motion up to more
31 capable individuals than myself, but I was just going to say that
32 it's a fishery that's been unencumbered by regulation, to the point
33 where the demand hasn't necessarily exceeded the supply, and so
34 you don't have that fluctuation, right, and so you can likely say
35 that this thing is at equilibrium.

36

37 We've got a species that matures at 150 millimeters, I mean, like
38 the size of my finger, and it's robust to the harvest that it's
39 undertaken for years on end, and unless -- I mean, in my mind,
40 unless we see some shift in the management of numerous species,
41 you're not going to have the fishery switch to this species in
42 large enough -- Or in, you know, a large enough proportion to truly
43 have a large enough impact to start exceeding ACLs, because, even
44 when the red snapper regulations went down, you saw an increase in
45 targets, but, because of the fluctuation in landings and everything
46 else, it wasn't a marked increase or anything, that it was tangible
47 to the point where it was concerning.

48

1 **VICE CHAIRMAN BARBIERI:** Okay. Thank you for that, Trevor, and so
2 we may be due for a break, right, but we need to complete this
3 item, and, you know, I'm willing to do a break, if people can start
4 crafting -- I mean, I think all we need, at this point, is a
5 motion, right, to move forward with this, in terms of whether we
6 want to update the catch advice that has been there before, right,
7 based on this analysis, which was requested, you know, through the
8 SEDAR Steering Committee process, to be conducted at this level,
9 you know, and so, looking at everything that we have to accomplish
10 in the southeastern United States and Caribbean, right, in terms
11 of stock assessments and considering that this stock is not
12 overfished and not undergoing overfishing, and that the last
13 assessment had estimated BMSY to be -- I mean, the stock to be
14 well above BMSY, and a decision was made, a practical decision,
15 to, instead of committing resources in the Center to conduct a new
16 stock assessment, that management advice would be refreshed using
17 an interim analysis, and I think that's a sensible decision that
18 is practical and had to be made.

19
20 The analysis was provided here, and we've had a number of questions
21 and concerns addressed, and so I think we are ready to make a
22 motion, and we need one that would integrate this with our
23 recommendation for -- I mean, our determination that this analysis
24 is consistent with the best scientific information available and
25 that recommendations regarding catch advice, right, can be made at
26 whatever levels we decide to. Harry, do you have one for us?

27
28 **MR. BLANCHET:** Of course not. I have another question, and so,
29 historically, and this is following-up on some of Doug's comments
30 earlier, and so we had an ACL that came out of the assessment that
31 said that we could harvest more fish than we historically had.

32
33 We then proceeded to underharvest those fish, and so, if everything
34 was in equilibrium, that would mean that there was more fish in
35 the water today than would have been estimated had we harvested
36 all the way to the ACL each and every year since the assessment.
37 Has that changed our projection of ABC or ACL going forward, even
38 if we do not see a signal in the interim assessment that would say
39 things are doing better than expected or doing worse than expected?
40 Does that make sense?

41
42 **VICE CHAIRMAN BARBIERI:** It does, and, I mean --

43
44 **MR. BLANCHET:** Has our conservation actually made a difference in
45 what we could harvest in 2024 and 2025, or is this an opportunity
46 to continue to conserve and perhaps have additional harvest in
47 some of those future years when we are looking at actual declines
48 from what we are currently harvesting? Thank you.

1
2 **VICE CHAIRMAN BARBIERI:** Well, Harry, I would defer to the council,
3 right, to make the decisions on those last topics there that you
4 brought up. If the council wants to be more conservative, they
5 can, but I would defer to them on that, but, here, I think, unless
6 I am misunderstanding this, Katie and Francesca, but I'm thinking
7 that what's coming out of this interim analysis is fairly
8 consistent, about ballpark, of where we would be if we kept
9 following our projections that have been in place, you know, around
10 the ballpark, right, but with the advantage, in this analysis, of
11 us having additional years, right, to look at more of the dynamics
12 of the stock over the last three years or so, and, actually, not
13 three, but six years, because the terminal year before was 2017.

14
15 This is an opportunity to use a process that was, you know,
16 recommended through the SEDAR Steering Committee process for a
17 request to the Center to refresh management advice, right, based
18 on a SEDAR analysis. Steve.

19
20 **MR. BLANCHET:** I agree. I agree, but I just think that that is
21 going to be a question that is likely to be asked at the council,
22 and so a little prep might help with responding to that.

23
24 **VICE CHAIRMAN BARBIERI:** I appreciate that, Harry. Steve.

25
26 **DR. SAUL:** Thank you, Mr. Chair. I just sent two sentences to the
27 Meetings email as a starting point for a motion.

28
29 **VICE CHAIRMAN BARBIERI:** Okay, and so I will read the motion on
30 the board by Steve Saul. **The SSC accepts the vermilion snapper
31 interim analysis as the best available science, and I would just
32 edit that to be consistent -- To accept this analysis as consistent
33 with the best scientific information available.**

34
35 **MR. RINDONE:** You're doing great.

36
37 **VICE CHAIRMAN BARBIERI:** Okay. **So accepts the vermilion snapper
38 interim analysis as consistent with the best scientific
39 information available. The stock remains not overfished, nor
40 experiencing overfishing. The SSC recommends setting catch advice
41 at the estimated five-year average, in FES units, at 5.049 million
42 pounds whole weight.** That is Dr. Saul's motion. Do I have a
43 second for this motion? Then we can start discussing, you know,
44 some specifics within there. Will Patterson, are you seconding
45 the motion?

46
47 **DR. PATTERSON:** No, sir.

48

1 **DR. CRABTREE:** I will second it.
2
3 **VICE CHAIRMAN BARBIERI:** Okay. Thank you, Dr. Crabtree.
4
5 **DR. CRABTREE:** Steve, what's the rationale behind choosing the
6 five-year average? I know that's what we used last time, but as
7 opposed to the three-year average, which, at least as I understand
8 it, the three-year would more closely track the index, which might
9 be desirable, and I don't really remember what our rationale for
10 five years was last time, and I think it was because things were
11 variable.
12
13 **VICE CHAIRMAN BARBIERI:** Before, Steve, you go there, Katie, can
14 you clarify that, because Katie had, you know, given a
15 presentation, and you missed that meeting, Dr. Crabtree.
16
17 **DR. CRABTREE:** That's why I don't remember it.
18
19 **VICE CHAIRMAN BARBIERI:** Yes, and your European travels prevented
20 you, and perhaps French wine at the time, and so, Dr. Siegfried,
21 would you please --
22
23 **DR. SIEGFRIED:** I would have missed it for French wine too, but,
24 yes, what I presented was that we recommended that you consider
25 index noise, the life history of the fish, when the species recruit
26 to the fishery, and/or the size-age composition of the survey, and
27 the set of recommendations -- I will get there.
28
29 Okay, and so, if stable management advice is a management goal,
30 choose longer averages or larger buffers, and that's a reason to
31 go to the five-year. Is quick response to highs or lows or episodic
32 mortality a management goal? Then choose averages over fewer
33 years, and so, in this case, there's not an episodic mortality
34 event, necessarily, that's going to impact the stock, and so the
35 shorter averages would not be supported by -- If you don't want to
36 follow index noise, and that there are no episodic mortality events
37 to monitor, and then it seems like, consistent with previous
38 decisions, that management advice stability is important, because
39 that was what was followed in SEDAR 67, and so that would be an
40 argument for the longer five-year average as well.
41
42 **VICE CHAIRMAN BARBIERI:** Thank you so much for that, Katie, and I
43 will let Steve -- Steve, do you have anything to add to that,
44 regarding the value that you used?
45
46 **DR. SAUL:** It was, obviously, just following the precedent and
47 sort of -- There was a bit of noise in the signal over the last
48 several years, really, and so trying to mitigate, or encapsulate,

1 some of that noise, but I am open to using the three-year and I
2 don't really have strong feelings one way or another.

3
4 **VICE CHAIRMAN BARBIERI:** Mr. Rindone, do you have a point of
5 clarification?

6
7 **MR. RINDONE:** I do. Thank you, Mr. Chair. You did great on your
8 motion crafting, by the way. I wanted to add in "the SSC accepts
9 the 2023 vermilion snapper interim analysis", for specificity, and
10 I also wanted to note, for the sake of the motion, that stock
11 status cannot be revised through an interim analysis, and so the
12 second sentence, for the sake of considering that, should be struck
13 from the motion.

14
15 It's not -- It's just not something that can be determined or
16 changed through an interim, and, also, to note -- The last thing
17 I was going to note to you was that the catch advice that is put
18 on the books remains on the books until changed, and so the five-
19 year average that you guys used the last time I think terminates
20 in 2025, and I think it's to set 2021 to 2025 and subsequent years,
21 and so it's still applicable for the rest of this year and next
22 year and the following year, and, thinking about, you know, when
23 something like this could be taken up by the council -- You know,
24 it's unlikely to be this year, and so maybe next year, which means
25 it maybe would be in effect in 2025, by which time, you know, we
26 could have put another interim analysis in front of you at that
27 point, but the catch advice, one way or another, remains in place
28 until changed, and so it could be in place for longer than a five-
29 year period, as we've seen for other species like, you know,
30 Spanish.

31
32 **VICE CHAIRMAN BARBIERI:** To that point, Dr. Crabtree?

33
34 **DR. CRABTREE:** Yes, and, Ryan, just wordsmithing, should we --
35 **Instead of saying "setting catch advice", should we say "the ABC"?**

36
37 **MR. RINDONE:** Yes, because the yields that are shown in the interim
38 analysis are commensurate with the ABC, and so the current ABC
39 from the last -- From SEDAR 67 is 7.27 million pounds, and the ACL
40 that the council set was 25 percent below that, at 5.45 million
41 pounds, and so, considerate of all of that, you know, this does
42 constitute a 2.2-million-pound drop in what you guys are
43 recommending for the ABC.

44
45 **VICE CHAIRMAN BARBIERI:** Are you okay with that change, Steve?

46
47 **DR. SAUL:** Yes, totally, and, given -- I think, to Ryan's point,
48 that this may not even be implemented until another few years from

1 now, since we're fishing this thing down to its MSY proxy, and
2 perhaps this is more the role of the full council, probably the
3 lower value is a better target to aim for, just so that we don't
4 overshoot, you know, the runway, so to speak, when we're bringing
5 this thing in to land at whatever it is, 30 percent, I guess. Not
6 that that should really be a reason for choosing that number, but
7 the --

8
9 **VICE CHAIRMAN BARBIERI:** I think that what we have here is
10 consistent with everything that you said, with that drop.

11
12 **DR. SAUL:** Yes.

13
14 **VICE CHAIRMAN BARBIERI:** Dr. Simmons, would you like to address
15 the committee?

16
17 **EXECUTIVE DIRECTOR SIMMONS:** Yes, and thank you, Mr. Chair. I
18 guess I read the first part of this motion as in the committee is
19 agreeing that the Science Center's approach, with this interim
20 assessment, does not -- You think this approach is robust, and we
21 don't have to put it through the SEDAR process, and so that's the
22 first piece that I'm taking away. I don't have to go to the
23 Steering Committee and say, no, we want to put this back on the
24 schedule, and so I just wanted to make that clear, that we're
25 comfortable with this approach.

26
27 Then the other piece of it is I agree that the ABC -- This ABC is
28 quite a bit lower than what we currently have on the books, the
29 7.27, but our ACL, that was just implemented in FES, is about four-
30 hundred-and-something-thousand pounds different than what we have
31 on the board there, and so I don't know if we could give the
32 council a little bit more flexibility and just say, you know, if
33 they deem, you know, lowering this catch limit now, since this was
34 just implemented, based on concerns about landings or other things,
35 and maybe we could not tie the council's hands, perhaps, with this,
36 since the new catches were just implemented, or just provide me
37 some more rationale for that lower ABC, and that would be very
38 helpful, I think at this time, since we just got the other numbers
39 on the books.

40
41 **VICE CHAIRMAN BARBIERI:** I see. I mean, I see the practical side
42 of this, right, undoubtedly, but then what I question is how we
43 structure then our agenda, right, and what comes before the SSC.
44 You know, we review the -- So we're going through the procedure,
45 right, of reviewing an analytical product and providing management
46 advice, following all the procedures that are in the books, and
47 that's what we use to provide management advice, and so I feel a
48 little uncomfortable, you know, not going there, because we have

1 reviewed an analysis, and we have a new ABC recommendation to make,
2 and I know that the timing of all of this, you know, got a little
3 shuffled, and this maybe came -- You know, was produced a little
4 too late, or a little later than expected, because, if what I'm
5 hearing, right, is correct, it's like maybe the SSC should not
6 make this recommendation now, because the council just had a new
7 ABC approved back in May. If that's the case, then why did we
8 review this to provide management advice?
9

10 **MR. RINDONE:** So this was reviewed because we had vermilion snapper
11 on the SEDAR schedule, and we negotiated with the Science Center
12 about doing this as an interim analysis, as opposed to another
13 operational assessment, because, in looking at the landings, the
14 landings appeared stable, and they continued to appear stable, and
15 so, you know, we haven't had a full fishing year of the new catch
16 limits implemented yet, but this -- You know, like I said, we were
17 planning on having an updated stock assessment, because, you know,
18 it's 2023, and the terminal year was 2017, and it was a reasonable
19 thing to do, but, you know, council priorities and workloads and
20 throughput bottlenecks being what they are, this is when we were
21 able to get to this specific item.
22

23 If it's the committee's pleasure to push forward with this motion,
24 then that's fine. If you guys wanted to go ahead and let the
25 previous catch advice, which has just recently been implemented,
26 ride and see what that does for a couple of years, and, you know,
27 it's valid through at least 2025, from the SEDAR 67 stock
28 assessment, and you guys can make a request, through the council,
29 for an interim analysis at your pleasure, and these interim
30 analyses take -- Well, they're far less of a lift than doing a
31 stock assessment, which is part of the reason why we landed on
32 doing that for this species in the first place.
33

34 **VICE CHAIRMAN BARBIERI:** Just one second, and so I guess the
35 concern here is that current landings are about, what, seven
36 million pounds?
37

38 **MR. RINDONE:** No, and the current ABC is seven million pounds.
39 The current ACL is 5.45 million pounds, and the current landings,
40 as of -- That's probably Waves 1, 2, and 3, Francesca, and so the
41 current landings, through June, are 26.7 percent of the ACL, and
42 so, obviously, you know, July and August is a big summer fishing
43 wave, and so we would expect some landings there, but, without
44 looking at wave-specific landings for the tail-end of the year --
45 At any rate, it seems unlikely that we're going to meet the ACL
46 that we have on the books.
47

48 **VICE CHAIRMAN BARBIERI:** So here's my question. What was the total

1 landings, or the proportion of the ACL, last year, in 2022?

2

3 **MR. RINDONE:** 70.7 percent.

4

5 **VICE CHAIRMAN BARBIERI:** Okay, and so it looks like Mike Larkin
6 did find a phone booth.

7

8 **DR. MIKE LARKIN:** Can I give my answer now? Can you hear me?

9

10 **VICE CHAIRMAN BARBIERI:** Superman, you sure can.

11

12 **DR. LARKIN:** I would actually say quite the opposite of Superman,
13 and so I did screw up. When we changed, in May, from CHTS to FES,
14 I just had -- My code was pulling from the wrong dataset, and so
15 what you're looking at right now -- On the website, it was like
16 600,000, and so that is in CHTS, and so we're working on getting
17 that converted over to FES, and so that will change that 600,000
18 over to 1.1 million, and so, essentially, what you're changing is
19 from the -- It's a stock ACL, and so commercial and rec, and the
20 percent of the ACL will change from about 26 percent, as Ryan just
21 mentioned, and it will change it to about 36 percent, and so the
22 current recreational landings are 1.1, or 1.12, million pounds
23 there, and that's from January through June for MRIP, and then we
24 have LA Creel from January up to about mid-August for 2023, and so
25 they will change, but only -- You know, the ACL will go from 26
26 percent to 36 percent.

27

28 **VICE CHAIRMAN BARBIERI:** Right, and so my question here is to the
29 point that will this new ABC constrain the fishery, right, and be
30 either at or below current landings, right, or this new ABC will
31 be somewhat just symbolic in nature, because we provide an ACL to
32 the council, but that quota is not being met, and, if we are
33 fishing at just about 65 percent of the quota, this is not
34 constraining the fishery.

35

36 **MR. RINDONE:** If you just double it, and if you go ahead and round
37 that 1.9 up to two, and you assume, you know, that, ultimately --
38 That's for the first three waves, and you assume you have something
39 similar for the second three waves, that still puts you at four
40 million pounds out of the 5.45 that's on the books, or four million
41 pounds compared to the five-million-pound ABC that you're talking
42 about here, and so you guys can debate the degree to which you
43 think that there might be more effort on vermilion in Waves 4
44 through 6 compared to 1 through 3, but, based on, you know, what
45 we've seen in previous fishing years, it seems as if it's unlikely
46 to meet a higher quota.

47

48 **VICE CHAIRMAN BARBIERI:** Okay. I have Trevor and then Roy.

1
2 **MR. MONCRIEF:** I mean, when the options were listed, it was like
3 three or five years, and that's kind of what I was tinkering around
4 with in my head, with the thought that, you know, status quo wasn't
5 even on the table. At the end of the day, if status quo is on the
6 table, given this species index is tracking pretty well, and, I
7 mean, everything about it is fairly stable -- I mean, my contention
8 has always been don't take action where action isn't needed. If
9 I saw something that was triggering, that we needed to maybe look
10 at something a little bit further, or shift, then I think there
11 would be something to be made, but I just don't see that here.

12
13 **VICE CHAIRMAN BARBIERI:** Okay. Thank you, Trevor. Dr. Crabtree.

14
15 **DR. CRABTREE:** I mean, it seems to me though that we have a catch
16 level on the books now that is badly out of date, and we have
17 requested a new analysis, which we reviewed, and it seems
18 appropriate, and it's done correctly, and I think this is the best
19 available scientific information we have, and so it seems, to me,
20 that we need to give a new ABC, and, I mean, if we're going to
21 request these analyses, and we don't find a problem with them, a
22 reason not to use them, then I think we ought to use them.

23
24 Now, I understand the logistic problems, and this would require
25 the council to come in, at some point, and lower the ACL, but I
26 don't think that's a valid reason for us not to use this, and so
27 it does seem, to me, that we ought to go forward with what's laid
28 out in the motion.

29
30 Now, we could talk about the choice of years, but the five years
31 seems reasonable, and I don't think we should go in and choose
32 different timeframes because it gives you a different number or
33 anything, and so I am fairly comfortable with moving with the
34 motion.

35
36 **VICE CHAIRMAN BARBIERI:** Right, and, see, my concern is departing
37 from this and how this would be questioned, you know, relative to
38 NS 2 and NS 1, right, and so we've been given an analytical product,
39 and we do this all the time, and either we reject that analysis as
40 not scientifically consistent, right, with the best available
41 science, or, if we accept the analysis as valid, we provide an
42 update, and, I mean, this is what we do, and so I'm finding that,
43 you know, this might generate some concerns, right?

44
45 **EXECUTIVE DIRECTOR SIMMONS:** Thank you, Mr. Chair, and so just a
46 couple of things. Remember this is the first time we've taken
47 this approach with vermilion, and kudos to the Science Center.
48 They got it done a lot quicker than we would have had it done

1 through an operational assessment on the SEDAR schedule.

2
3 The OFL you have on the books for this stock is very high, and
4 it's 8.6 million pounds, and so we need to consider that, in my
5 opinion, if we're going to consider changing the ABC.

6
7 It's always up to this committee to decide if they want to
8 recommend changes to catch or not, and take, for example, red
9 grouper. You deliberated that a long time with an interim
10 analysis, on whether you wanted to recommend changes or keep the
11 current advice on the books, and I think you decided, at the most
12 recent one, to keep the current advice on the books, and so it's
13 always up to the committee to make that decision.

14
15 **VICE CHAIRMAN BARBIERI:** Dr. Frazer.

16
17 **DR. FRAZER:** I mean, again, if you guys are just wondering, you
18 know, what the implications are for the council process, right,
19 and so, right now, you have on the books an ACL, right, that's
20 essentially 75 percent of an ABC that is, you know -- So the
21 current catch advice is 5.4 million pounds.

22
23 The way that this motion is written, and, again, I'm not telling
24 you what to do, right, but the way that the motion is written is,
25 because it's the best scientific information available, and the
26 ABC is going to be set at 5.0, right, we don't have a status quo
27 kind of management situation on the board anymore, because the ABC
28 is now below the ACL, and the ACL is at 5.45 million pounds, and
29 the ABC will be set at 5.04, and the council has the option to
30 move it -- To set an ACL that's lower than that, again, and they
31 may do that, or they may not, but that's what's on the table, and
32 that's what I am trying to tell you.

33
34 Trevor made the point that we're at status quo, but, in fact, it
35 won't be status quo, right, and I just wanted to make sure that
36 people -- Because the way that the motion is structured, and it
37 says "the best scientific information available", the council
38 doesn't really have an option to not accept this, right, because,
39 if they did, then it would go back to the agency, right, and they
40 would have to say why did the council reject the best scientific
41 information available, in which case it would probably be ignored,
42 and so I just wanted to try to tell you where you're at in the
43 grand scheme of things.

44
45 **VICE CHAIRMAN BARBIERI:** Okay, and so I have Roy and then John
46 Mareska. Thank you for that, Dr. Frazer, because I think that
47 that helped.

1 **DR. CRABTREE:** Thanks, Tom, and I think we recognize this will
2 require the council to come in and respecify the ACLs. Now, Carrie
3 brought up the OFL issue, and I believe the Center could provide
4 us with -- I think they have an estimate of an OFL based on this,
5 and so we could add a new OFL into this motion, if Steven wanted
6 to do that, and, Katie, could you fill us in on that?
7

8 **DR. SIEGFRIED:** On Slide 4, Francesca provided the FES-based OFL
9 of 6.76 million pounds whole weight. If we did adjust that by the
10 ratio, the five-year index average, which is 0.859, and you would
11 get an OFL of 5.805 million pounds whole weight.
12

13 **VICE CHAIRMAN BARBIERI:** So, Jess, did you capture that in the
14 motion? Then I have John Mareska and then C.J. and then Doug.
15 Would you please, Katie, just tell her what the values were for
16 the OFL?
17

18 **DR. SIEGFRIED:** The OFL, at the estimated five-year average in FES
19 units, and you can just copy all of that and put "OFL" in place of
20 "ABC" for the next sentence, or before, wherever, but the OFL, at
21 the estimated five-year average in FES units at -- Why don't you
22 say it, Francesca?
23

24 **DR. FORRESTAL:** It's 5.805 million pounds whole weight.
25

26 **DR. SIEGFRIED:** We didn't show that, but all of the calculation
27 information is available in the PowerPoint, and we can potentially
28 update that, if we need to.
29

30 **VICE CHAIRMAN BARBIERI:** Okay. Thank you for that, Katie and Jess.
31 John Mareska.
32

33 **MR. MARESKA:** I guess my question is what are the years that are
34 relevant to these projections, and so that hasn't been specified,
35 and I think, initially, Francesca indicated that there was some
36 overlap, that there was -- That it started at 2023, but 2023 was,
37 you know, already on the books, and we're already more than halfway
38 through 2023, and so -- If this pertains to 2023, I would be
39 against the motion, since we're already through the year.
40

41 **DR. FORRESTAL:** This is where the confusion comes from. The
42 reference catch that is being used to update this catch advice is
43 from SEDAR 45, and so it is from two sets of projections ago, or
44 one, and it's not from the most current projections, and so those
45 projections were based off of 2017 through 2021, and so we're
46 already past those points. The most recent catch advice you have
47 on the books is from SEDAR 67, and so this is using SEDAR 45 to
48 update catch advice. I don't know if that makes sense.

1
2 **MR. RINDONE:** That's because the projections from SEDAR 67 run
3 through 2025, and so you guys have valid catch advice from SEDAR
4 67 on the books for another two-and-a-half years before those time
5 out, based on the SSC's own, you know, non-codified best practices
6 of not using projections for more than five years.
7
8 **MR. MARESKA:** So these numbers are 2021 through 2025?
9
10 **MR. RINDONE:** The 7.27-million-pound ABC, and the 5.45-million-
11 pound ACL, that's currently on the books, that just went into
12 effect this year, is based on the projections from SEDAR 67 that
13 you guys validated for 2021 through 2025. These are based off of
14 the -- They're based off the projections that were run for SEDAR
15 45, the projections for which ran through 2021, and so --
16
17 **MR. MARESKA:** Again, I'm not getting a clear answer, and what years
18 do these five years pertain to? Is this starting in 2024 and going
19 five years forward or 2021 and going five years forward?
20
21 **VICE CHAIRMAN BARBIERI:** No, and this is the average, John. This
22 is the number of years of the index that were used to estimate the
23 average, and this is not a projection.
24
25 **MR. RINDONE:** This is the average of the last five years.
26
27 **VICE CHAIRMAN BARBIERI:** There is that one set of OFL and ABC, and
28 they remain on the books until it's changed.
29
30 **MR. MARESKA:** What year is this going to apply to? To the current
31 year, 2023, and 2024, and any years going forward?
32
33 **VICE CHAIRMAN BARBIERI:** It's going to go from 2024 until it is
34 refreshed.
35
36 **MR. RINDONE:** Well, that's not necessarily true. It's when
37 implemented until refreshed, and so, if it's not able to be
38 implemented until 2024, then it's that, or 2025, or whenever it
39 might be, but it's from when implemented until modified at a future
40 date.
41
42 **VICE CHAIRMAN BARBIERI:** Right, but, at the earliest, it would be
43 2024.
44
45 **MR. RINDONE:** I can confidently say that there is absolutely zero
46 chance that this will be implemented in 2024.
47
48 **VICE CHAIRMAN BARBIERI:** Okay, and so zero, and so that's pretty

1 confident, and so this is to become effective in 2025, right, and
2 so this would become effective in 2025, and our current projections
3 on the books have a terminal year of when?
4

5 **MR. RINDONE:** 2025.
6

7 **VICE CHAIRMAN BARBIERI:** So, again, and I'm not trying to
8 overcomplicate this, and, I mean, if the council would prefer not
9 to receive management advice at this point from the SSC, I can
10 understand that, but, if we are proposing a catch level
11 recommendation that's not constraining the fishery, and so it would
12 not disrupt the industry, on both the commercial and recreational
13 sides, right, because they are not fishing the quota, right, and
14 this would generate a little procedural step, right, to be taken
15 for the council to start an amendment to change, right, and it
16 would probably be a framework, right, amendment to change this
17 management advice, but we don't constrain the fishery, and this
18 would become effective at the tail-end, right, of the current
19 projections. It's hard for me to understand why it wouldn't be
20 desirable, and what would be the problem? Can you explain that to
21 us, Tom?
22

23 **DR. FRAZER:** I don't see the problem either, and the council is
24 always going to want, from this body, the most recent, you know,
25 defensible catch advice that they can have, right, and they have
26 to respond to the public, and so they're not going to say we don't
27 want the catch advice, right, and the question I have, really for
28 this group, that's most likely to come from the council, given
29 where we are, and, you know, we have a fishery that seems to be
30 operating without a problem with the existing ACL, right, and it's
31 under the ABC, and so there's not a lot of aptitude, or, excuse
32 me, appetite to want to modify it greatly, given this advice, but
33 they will ask, given that the ABC is significantly reduced, why
34 did you go with a five-year average, as opposed to a three-year
35 average, particularly given the variability in the indices over
36 the last couple of years.
37

38 I would suspect, and, again, I'm not going to speak for them, and
39 we haven't had the conversation, but what they would say is the
40 five-year -- They would acknowledge that the five years that is
41 written in the motion here does not allow them to maintain status
42 quo, which Trevor alluded to before, and the three-year sets the
43 ABC higher than the current ACL, and it still allows, or affords,
44 the council some latitude to provide a buffer, right, that we might
45 be able to justify, based on the information that comes from the
46 Science Center.
47

48 I'm not -- We want the information, yes, right, and I think it's

1 important that you provide it, and that's what the role of the SSC
2 is, but I just -- All I'm asking you to do is consider fully the
3 way that the motion is written at this point, and I would like to
4 know, and I suspect the council would like to know, why you've
5 gone with the estimated five-year average, as opposed to the three-
6 year average, given the criteria that Katie laid out before and
7 why you would want to use one of those time intervals.

8
9 **VICE CHAIRMAN BARBIERI:** Right, and I think we have answers for
10 all those questions, right, that do not differ from the regular
11 advice that we provide to the council on a regular basis, following
12 the criteria that we follow, and this represents a scientific
13 review of a methodology, and all of this is just a -- You know, we
14 may disagree that it's best or not, but I think we have criteria
15 based on our evaluation of the science of why we made those
16 choices. Okay. I have Doug and then Steve.

17
18 **MR. GREGORY:** Thank you, Mr. Chair. I am quite confused, but what
19 I was going to suggest in the motion -- If I understand this
20 correctly, we could say something to the effect that, yes, the
21 best scientific information, and I'm not wordsmithing, and I'm
22 just talking, but the best scientific information, and the SSC --
23 You know, we used the five-year average, because that's what we've
24 used in the past for this fishery, and that gives us a certain
25 number, and then we could say something to the effect that, while
26 different from the current ABC, both ABCs are sufficiently higher
27 than the existing landings, as to not really restrict the fishery,
28 and so we suggest the council decide which ABC they want to use,
29 and we kind of punt it to the council, and we say it really, in
30 effect, doesn't matter, if I understand this correctly, and I will
31 leave it at that. I probably shouldn't have said anything.

32
33 **VICE CHAIRMAN BARBIERI:** Just following the queue here, Roy, can
34 you hold that thought, because I have Steve Saul.

35
36 **DR. SAUL:** Thank you, Mr. Chair. Just to answer Tom's question,
37 and to your point, Luiz, I think -- I don't know, but about thirty
38 minutes ago, Katie went on the record reading -- She was helping
39 us refresh our memories in terms of what the criteria are to use
40 the three versus five-year average, and I think this sort of fell
41 within that five-year criterion, and so that information -- Correct
42 me if I'm misremembering or if I'm wrong.

43
44 That can be used, if justification if needed on the council end,
45 and that can be used sort of there, and then I think, also, you
46 know, just because of the variability -- You know, when you look
47 at the actual index, there's quite a bit of stability, and then
48 five years out is when you sort of get some of that variability,

1 and so that, to me, would actually argue for averaging across those
2 five years, because we're not 100 percent certain of, you know,
3 what is driving that bouncing around.

4
5 Having said that, there's obviously -- You know, there's not much
6 concern with this species, given their high productivity, and
7 they're not overfished, and they're not experiencing overfishing,
8 and they have not been for a long time, as long as I've been
9 involved in these processes, and so, you know, I'm not, as I
10 mentioned earlier, beholden to whether we use the three or the
11 five-year value, and it doesn't really matter too much to me.

12
13 The only sort of precautionary note, in my mind, is that -- It's
14 probably not an issue, because we have not been catching the catch
15 amounts that the projections estimated since the last full
16 assessment was done in 2017, and so we're not really -- But, you
17 now, we were -- The projections do indicate that, you know, if we
18 were catching those amounts, that we would be fishing down towards
19 SPR 30, and just to make sure that we don't overshoot that.

20
21 Probably it's a moot issue, right, given that catch has never even
22 got that high, right, and we're probably still pretty far away
23 from SPR 30, unless there is some other covariate process going
24 on, but I don't know if that's helpful or not.

25
26 **VICE CHAIRMAN BARBIERI:** Thank you, Steve. That was helpful. Sean
27 Powers.

28
29 **DR. POWERS:** Thank you. Ryan, and I'm sorry I'm not there, and so
30 it's a little harder for me to flip back and forth, but how much,
31 under this new proposed ABC is the current landings?

32
33 **MR. RINDONE:** On the back of a wet napkin, 10 to 20 percent,
34 depending on the year.

35
36 **DR. POWERS:** Okay, and so the new one would get us fairly close to
37 where the landings are now. I mean, I do think, to Doug's point,
38 that --

39
40 **MR. RINDONE:** You wouldn't have -- Well, I mean, it depends,
41 because, if you set the ACL at 25 percent less than the ABC, then
42 we would have an issue with exceeding the ACL under this revised
43 ABC. That would change, perhaps, the council's decision-making on
44 how much below the ABC it decremented the ACL.

45
46 **DR. POWERS:** Okay, because, I mean, to Doug's point, I do think
47 it's our job to decide whether we use the three or the five-year
48 average, although I don't think either one is going to pose a

1 problem, and so, Luiz, can I make a substitute motion? I can't
2 read the room, to see if I'll get a second, but, basically, that
3 motion, but the three-year average.

4
5 **MR. RINDONE:** Katie, can you provide, or Katie and Francesca, can
6 you provide updated numbers for the OFL and ABC for Sean's motion,
7 please? It's using the three-year average instead of the five,
8 and so, while they're working on that, I will note to you guys
9 that, the last time that we ran the ACL/ACT Control Rule for the
10 council, we had that one year in 2018 where 102.6 percent of the
11 ACL was landed, and, since then, since there hasn't been an
12 exceedance of the ACL, the ACL/ACT Control Rule would inform the
13 council that they could use an 8 percent buffer between the ACL
14 and the ABC.

15
16 **DR. POWERS:** So what you're saying is they're not going to use a
17 25 percent buffer?

18
19 **MR. RINDONE:** I am saying, if they were to use the ACL/ACT Control
20 Rule, should they elect to do that, which is entirely elective,
21 then it would inform them that an 8 percent buffer would be
22 appropriate.

23
24 This last time, when you guys gave them the 8.6-million-pound OFL
25 and the 7.2-million-pound ABC from SEDAR 67, they looked at that,
26 and they looked at the landings, which seemed pretty consistent
27 over time, and they didn't see a reason to let large ABC ride, and
28 so they decreased the ACL 25 percent below the ABC, and they
29 justified that because they thought that it was high enough to
30 allow fishing to continue to occur in an area in which it had been
31 occurring, while also acting as a little bit of a check-in-place,
32 in case there was some very large jump in the landings, for some
33 otherwise unforeseen reason, including their sentiments about the
34 variability of FES effort estimates and how those can translate
35 into variability in the landings.

36
37 They can ultimately set the ACL equal to the ABC, or any
38 decremented percentage below it that they want, as long as they
39 provide some justification for the decision.

40
41 **VICE CHAIRMAN BARBIERI:** Okay. This is a clarification from Ryan
42 to Sean, and I just want to make sure, Jess, that the numbers that
43 are going to be there on the board are correct, right, for the
44 three-year average before I ask for a second. Francesca.

45
46 **DR. FORRESTAL:** I have the updated OFL, and so, if we are adjusting
47 the catch advice using the 2018 OFL, it would be 7.717.

1 **MR. RINDONE:** That's 6.712, Jess, for the ABC.
2
3 **DR. FORRESTAL:** Yes, and that's correct.
4
5 **MR. RINDONE:** Thank you, guys, for keeping it at three sig figs
6 for us.
7
8 **VICE CHAIRMAN BARBIERI:** Yes, and that's wonderful. Thank you.
9 Now we have a substitute motion on the board by Dr. Sean Powers.
10 Do we have a second for this motion? No second for the substitute
11 motion? If not, I would say the motion fails without a second,
12 and we go back to the original motion, according to Roberts Rules.
13
14 **DR. POWERS:** Thanks, Luiz. I will add that the additional
15 information from Ryan that there might not be a 25 percent buffer
16 does even give me pause that the buffer might only be 8 percent,
17 and that even gives me pause for that motion, and so that's fine.
18
19 **VICE CHAIRMAN BARBIERI:** Sounds good then, Sean. Thank you. Dr.
20 Crabtree.
21
22 **DR. CRABTREE:** Well, I just want to clarify, because there seems
23 to be some confusion about what's the most recent analysis that we
24 have, and what is based on what, and I just want to confirm with
25 Katie and the Center that -- So what we're looking at now is the
26 most up-to-date analysis that we have, and in the Center's view is
27 appropriate for us to move forward on.
28
29 **DR. SIEGFRIED:** Yes, and I had a number of side conversations,
30 which means that I might not have heard everything that happened
31 at the table, but I understand it's confusing, because of the
32 timing. The only reason SEDAR 45 has been brought up is because
33 we needed to get the year after SEDAR 67 in FES units, and then
34 we've used the index from SEDAR 67 and looked at that trend to
35 update the FES-based value from 2018, which is after the terminal
36 year of SEDAR 67.
37
38 Normally what we would do is have an index that was longer than
39 the interim period for the previous assessment. For SEDAR 67, the
40 interim period, which is just average catches, was 2018 through
41 2020, and this index only goes through 2021, and so it's an
42 amalgamation of information from 45, projecting in FES units, and
43 the information we have from SEDAR 67.
44
45 The reason that we were okay with putting it forward was because
46 the values on the books are from SEDAR 67 through 2025, and this
47 allows the use of that accepted index to continue catch advice
48 past the end of catch advice from SEDAR 67, given that you all

1 aren't going to be able to implement it before then anyway, and is
2 that correct?

3
4 So it's not as clean as say red grouper, but, unless you want to
5 wait a couple more years and have a gap period between the SEDAR
6 67 projections and when you get interim advice through, this is
7 the best we can do at this time.

8
9 **VICE CHAIRMAN BARBIERI:** Okay. That clarification was helpful,
10 yes, super helpful, and so I have Steven Scyphers and then back to
11 Sean Powers.

12
13 **DR. SCYPHERS:** Thank you, Mr. Chair, and some of my questions got
14 answered in the last little bit of back-and-forth, but I guess I
15 was just going to ask about the implications of this first sentence
16 of deeming these interim analyses as BSIA and what implication
17 that had for the previous full assessment, and so are we then kind
18 of saying those recommendations are no longer the best available,
19 and this new index is more reliable and going forward, and I guess
20 my uncomfortableness comes with the magnitude of the reduced catch
21 advice, similar to Trevor's comments earlier.

22
23 I think, with a reduction of that magnitude on an index that's
24 just a bit noisy, and doesn't show a significant decline that
25 anyone can see, I have a hard time thinking about how to explain
26 that, how it's just someone says why did you reduce it, and I don't
27 immediately come up with a good answer on that, and so I'm leaning
28 towards, you know, the status quo, with my kind of current comfort
29 with this.

30
31 **VICE CHAIRMAN BARBIERI:** Thank you for that, Steven, because that
32 was helpful, and our next item is going to be actually a review of
33 our Southeast Region Best Scientific Information Available, and
34 Dr. Jack McGovern is here in-person to present that to us, and so
35 that might actually clarify some of these issues, but my
36 understanding is that a new analysis was done, and, if we are to
37 provide management advice based on that analysis, it is best for
38 the council to know that that advice is best, right, and it's
39 consistent with the best scientific information available.

40
41 We have a SEDAR schedule, right, that sets the workload for the
42 Science Center, and so, because new catch advice supersedes
43 previous catch advice, right, we are sort of under this requirement
44 to declare that new catch advice as consistent with the best
45 scientific information available, and so that's my understanding.
46 Later, you know, Jack is going to give his presentation, and we
47 might, you know, ask you, Jack, some additional questions and
48 clarifications then. Sean Powers.

1
2 **DR. POWERS:** I am sorry. I lowered my hand.
3

4 **VICE CHAIRMAN BARBIERI:** Thank you, Sean. Then Harry Blanchet.
5

6 **MR. BLANCHET:** Okay, and this might be me just going sideways, and
7 so bear with me for a moment. In -- I don't have my slide numbers
8 here, but you have the graphic with the updated index that shows
9 the annual variability around the estimated mean values, and the
10 next graphic shows the estimated mean values for three and five
11 years, and, now, that is a point estimate. Can you calculate the
12 variance around those three and five-year mean values, and is it
13 different from what came out of the base period? Thank you.
14

15 **VICE CHAIRMAN BARBIERI:** Harry, I don't think they're going to be
16 able to provide that answer today, but I get your meaning, right,
17 and it's to see if there's a significant difference between the
18 average generated by three and five years, from a statistical point
19 of view, and I think that's a good point, because we're dealing
20 with a highly-variable index here, and so we know that there are
21 relatively wide confidence intervals around these means, but they
22 are not being taken into account as we look at the means, you know,
23 one relative to the other.
24

25 **MR. BLANCHET:** Well, one of the benefits of having the five-year
26 moving average is you have more points in there, and so you may
27 have a better precision on your final estimate than you do with
28 the three-year moving average.
29

30 **VICE CHAIRMAN BARBIERI:** Right, and that's correct, yes. Okay.
31 Any additional comments? We have a motion on the board. Sorry.
32 Dave Chagaris.
33

34 **DR. CHAGARIS:** I mean, I feel like we're missing an option here.
35 I mean, so we determined that the analysis is best scientific
36 information, but, to me, like if we interpret -- The information
37 provided is the index standardization, and it's not the decision
38 process, and so I don't think we've taken the time to interpret
39 the information, and what I interpret the update on the index
40 saying is that there's really been no change since, you know, 2017,
41 and so, to Steven's point, you know, why are we then reacting?
42

43 You know, I'm supportive of a status quo. I mean, you can have
44 BSIA, and does that tie our hands to where we have to, you know,
45 then implement the catch advice, because, to me, I would say the
46 best scientific information demonstrates that the stock hasn't
47 changed since the last assessment, and there is no need to update
48 the catch advice, and that's my interpretation.

1
2 **VICE CHAIRMAN BARBIERI:** Right, and, to some extent, this is what
3 we did last time for red grouper, right, that we felt that the
4 analysis was well done, but we decided that we did not want to go
5 forward and recommend changing catch advice, and so that can be
6 done. I thought that, here, the way that the process was being
7 led, that that was the goal, was to refresh, you know, management
8 advice based on new analysis, but that's not mandatory. Roy.

9
10 **DR. CRABTREE:** Well, I think it though does put us in a tricky
11 spot, if we're going to say this analysis is the best scientific
12 information available, and we have an obligation, under the
13 Magnuson Act, to base catch levels on the best scientific
14 information available, and so, if we say this is, this is more
15 current than what we've had, I think you've got to do a lot of
16 explaining of then why aren't you using this, if you're saying
17 it's the best available, rather than using something that's many
18 years out-of-date. I'm not saying there isn't an explanation that
19 could be there, but I think you would have to be really careful
20 about explaining that adequately.

21
22 **DR. CHAGARIS:** In the situation where, you know, there was an
23 obvious decline, or increase, I would feel more compelled to react,
24 but, you know, we're given the index, and then we're given these
25 three or five-year averages, but, to Harry's point, there is no
26 significant difference between, you know, the updated years and
27 what was done previously, and so then what are we chasing? What
28 are we reacting to, just the variability in the index, and is that
29 what we're going to be adjusting the information on?

30
31 **DR. CRABTREE:** If we used an even longer time series, would that
32 give you any more comfort, because I think the Center could --
33 Katie, you guys could use -- If we wanted to use longer, you could
34 do that quickly? I'm not advocating for that, but is that doable?

35
36 **DR. CHAGARIS:** It's not about the timeline of the index. It's
37 like has something changed since the last stock assessment that
38 would compel us to update the catch advice, and the answer to that
39 question, based on the BSIA presented here, would be no, the way
40 I see it.

41
42 **VICE CHAIRMAN BARBIERI:** Thank you for that, Dave. I have Trevor
43 and then Steve. No?

44
45 **MR. MONCRIEF:** I agree with that point completely. I mean, we're
46 over here like chasing prescriptive measures, when, basically,
47 we're sitting at the same place we've been with this stock for a
48 long time, is that it's in good shape, and making a two-million-

1 pound shift, in my opinion, requires a fair amount of information
2 to justify it, because that is a large change, regardless of
3 impacts to the fishery or not, and that's saying something.

4
5 **VICE CHAIRMAN BARBIERI:** Right. Thank you, Trevor. Steve.

6
7 **DR. SAUL:** Thank you, Mr. Chair. Are there -- Like procedurally,
8 right, when we ask for -- I guess, first, we're not going to know
9 what -- We're not going to know what the current status of the
10 stock is until we do another stock assessment, obviously, right,
11 and so we don't -- We don't know that now, and we're going off of
12 something from six years ago, I guess, 2017, or seven years, and
13 we're assuming that the index stability is -- Of this one index is
14 reflective of that entire stock status, which was generated through
15 an integrated modeling process, right, with multiple indices and
16 catch series and age comp and length comp and whatever else went
17 into that assessment.

18
19 Procedurally, when we do these update assessments, are -- The
20 purpose is really just to set catch advice, right, because these
21 interim assessments -- Because we don't know -- Because they don't
22 provide, you know, new benchmarks or any of that kind of
23 information, and so I guess I'm struggling with doing nothing,
24 because then what's the point of, you know, having the Center spend
25 the time to do these interim assessments if we just look at the
26 trends and say, well, it's flat, and don't update it, or, you know,
27 it seems like we're -- Like we need to make a fairly permanent
28 decision one way or another, if we ask for -- If this is part of
29 the new normal part of our process, that we either use the
30 information to update old catch advice or, you know, what's the
31 point otherwise, I guess, and I'm struggling with that, I guess.

32
33 **VICE CHAIRMAN BARBIERI:** Thank you, Steve. I agree. Josh.

34
35 **DR. KILBORN:** To that point, I guess do I understand correctly
36 that this was originally scheduled to be a full-blown assessment,
37 and there was, you know, a negotiation, and this is what we ended
38 up with, and so my question is, have we ever done a full-blown
39 assessment and billed it as best science available and not used
40 it? Has that ever happened?

41
42 **MR. RINDONE:** Not recently, but --

43
44 **DR. KILBORN:** So my point is we would have made changes to the
45 catch advice based on the full assessment, and, since we didn't do
46 that, we did this instead, and now there is some hand-wringing
47 over whether or not we should actually change the catch advice,
48 which I think is invalid. Like I think all the points that Steve

1 was making is correct, and we should be making some catch advice,
2 based on this best science available.

3
4 **MR. RINDONE:** So we've had instances, in the past, where we have
5 had a complete assessment and the SSC has not recommended changing
6 catch advice, and an example I can think of is for greater
7 amberjack, and, in that particular instance, the SSC passed a
8 motion saying that they thought the assessment was consistent with
9 BSIA for that species, given the data available. However, they
10 weren't comfortable recommending catch advice based on it, because
11 of -- Then they gave a list of reasons as to why, and so it's not
12 common, but it has happened.

13
14 **VICE CHAIRMAN BARBIERI:** Yes. Doug Gregory.

15
16 **MR. GREGORY:** Thank you, Mr. Chair. The thing that bothers me is
17 an interim analysis is not equivalent to a stock assessment, and,
18 with the statement that this is the best available scientific
19 information, and the question that was just asked by the previous
20 speaker, it implies that it carries a similar weight, and I would
21 be more comfortable if we just say the SSC accepts the interim
22 analysis as a reasonable update, or a valid update, to the stock
23 assessment.

24
25 My concern about the indices is I don't understand them enough to
26 know how well they really reflect reality, and, in this particular
27 index, on Slide 6, you will see that the lower confidence interval,
28 in all but two instances, is a negative number, and so it
29 encompasses zero. I mean, if we were in a statistics class, we
30 wouldn't be able to conclude anything, and I am not trying to throw
31 the baby out with the bathwater, but I think we're putting too
32 much emphasis on interannual variations of an index that we're not
33 sure is as good as we would like to think it is.

34
35 I don't think we, as an SSC, have delved into each of these indices,
36 and, I mean, that's a part of the stock assessment, and I know the
37 stock assessment scientist and the Center has, and we're inclined
38 to trust their judgement, and so I am, but I just -- I am
39 comfortable with status quo, but not throwing this out. This is
40 an acceptable update on the assessment, and we can just go forward
41 with that. Thank you very much.

42
43 **VICE CHAIRMAN BARBIERI:** Well, thank you, Doug, and that was
44 helpful. I think we are ready to put this motion to a vote. We've
45 had a lot of discussion, a lot of people for and against, right,
46 this, because this is not a really clean -- One of those clean
47 traditional issues that we deal with on a regular basis, and so I
48 think we are ready to put the motion to a vote, and then, if it

1 passes, it passes. If it fails, we understand the feeling of the
2 committee, right, is going to be -- It's going to be clear then.
3
4 **With that, we have a motion on the board that the SSC accepts the**
5 **2023 vermilion snapper interim analysis as consistent with the**
6 **best scientific information available. The SSC recommends the OFL**
7 **at the estimated five-year average, in FES units, as 5.805 million**
8 **pounds whole weight and the ABC at the estimated five-year average,**
9 **in FES units, at 5.049 million pounds whole weight. Is there**
10 **anybody opposed to this? Is there anybody opposed to this?**
11
12 **MR. RINDONE:** Raise your hands high, so I can count them.
13
14 **MR. GREGORY:** Mr. Chair, I have a question.
15
16 **MR. RINDONE:** Eleven. Doug, what are you?
17
18 **MR. GREGORY:** I have a question. The interim analysis does not
19 include the --
20
21 **VICE CHAIRMAN BARBIERI:** Doug, we can't. Unfortunately, we can't.
22 The people who set the motion did not change it, and we put the
23 motion to a vote.
24
25 **MR. RINDONE:** Are you a yes or a no?
26
27 **VICE CHAIRMAN BARBIERI:** You can vote yes or no with the motion
28 as-is. It is unfortunate, Doug, but that's what we have to do.
29
30 **MR. GREGORY:** Well, I raised my hand before you called the vote,
31 but that's okay. I'm out of order. I vote against the motion.
32
33 **MR. RINDONE:** So twelve. Harry.
34
35 **MR. BLANCHET:** I am voting against the motion.
36
37 **MR. RINDONE:** That is thirteen against. All in favor of the
38 motion, four. Dan, are you for or -- At this point, let's go ahead
39 and do a roll call. Sorry for it being cumbersome, everybody, but
40 the --
41
42 **VICE CHAIRMAN BARBIERI:** Right, and I'm sorry, Jess. I should
43 have asked for a roll call, but sometimes things are -- I forget
44 that having this many people online makes it difficult.
45
46 **MS. MATOS:** Jim Tolan.
47
48 **DR. TOLAN:** No.

1
2 **MS. MATOS:** Sean Powers.
3
4 **DR. POWERS:** No.
5
6 **MS. MATOS:** Trevor Moncrief.
7
8 **MR. MONCRIEF:** No.
9
10 **MS. MATOS:** Doug Gregory.
11
12 **MR. GREGORY:** No.
13
14 **MS. MATOS:** John Mareska.
15
16 **MR. MARESKA:** No.
17
18 **MS. MATOS:** Jack Isaacs.
19
20 **DR. ISAACS:** No.
21
22 **MS. MATOS:** Steven Saul.
23
24 **DR. SAUL:** Yes.
25
26 **MS. MATOS:** Dave Chagaris.
27
28 **DR. CHAGARIS:** No.
29
30 **MS. MATOS:** Will Patterson.
31
32 **VICE CHAIRMAN BARBIERI:** Let's go to him last, Jess.
33
34 **MS. MATOS:** He's not on. Paul Mickle.
35
36 **DR. MICKLE:** No.
37
38 **MS. MATOS:** Harry Blanchet.
39
40 **MR. BLANCHET:** No.
41
42 **MS. MATOS:** Jason Adriance.
43
44 **MR. ADRIANCE:** No.
45
46 **MS. MATOS:** Luke Fairbanks.
47
48 **DR. FAIRBANKS:** No.

1
2 **MS. MATOS:** Josh Kilborn.
3
4 **DR. KILBORN:** Yes.
5
6 **MS. MATOS:** Steven Scyphers.
7
8 **DR. SCYPHERS:** No.
9
10 **MS. MATOS:** David Griffith.
11
12 **DR. GRIFFITH:** No.
13
14 **MS. MATOS:** Roy Crabtree.
15
16 **DR. CRABTREE:** Yes.
17
18 **MS. MATOS:** Luiz Barbieri.
19
20 **VICE CHAIRMAN BARBIERI:** Yes.
21
22 **MS. MATOS:** Mike Allen.
23
24 **DR. ALLEN:** No.
25
26 **MS. MATOS:** Cindy Grace-McCaskey.
27
28 **DR. GRACE-MCCASKEY:** No.
29
30 **MS. MATOS:** Dan Petrolia. Can you repeat it, Dan? We can't hear
31 you. You might need to switch to phone or log-out and then log
32 back in.
33
34 **VICE CHAIRMAN BARBIERI:** Or maybe you can just write something
35 there on the text box, Dan, for Jessica to read your vote.
36
37 **MR. RINDONE:** Dan, there's a chat function and a question box, and
38 it should be in the control panel on the right-hand side of your
39 screen for the webinar.
40
41 **MS. MATOS:** He said no.
42
43 **MR. RINDONE:** Thanks, Jess. It's sixteen no, four yes, and four
44 absent, and so four to sixteen with four absent.
45
46 **VICE CHAIRMAN BARBIERI:** **So the motion fails.** To me, that
47 expresses the will of the committee, right, regarding this issue.
48 I think our action item has been addressed.

1
2 **MR. RINDONE:** For the sake of the record, and for the council being
3 able to best understand what happened here, would you like this
4 failed motion to be included in the report?
5

6 **VICE CHAIRMAN BARBIERI:** Yes, please.
7

8 **MR. RINDONE:** Okay, because typically we don't, and so that's why
9 I asked.
10

11 **VICE CHAIRMAN BARBIERI:** Right, and I definitely would like this
12 one, and that's a good point. By the way, I just want to clarify
13 here, for Francesca and Katie, right, and the Science Center in
14 general, that this does not really reflect the fact that the
15 analysis was not well done and that the SSC did not consider this
16 to be methodologically valid, and it's just the nature of the data,
17 right, the behavior of vermilion snapper as a schooling species,
18 and it creates challenges, right, that are difficult to overcome,
19 and so, even though the analysis was solid and well done, the
20 committee didn't feel confident enough to use this analysis for
21 changes in management advice. I think this should be reflected in
22 our report as well, because I want to be clear, right, to the
23 Center that we agree with the analysis as conducted. Josh.
24

25 **DR. KILBORN:** I'm curious what happens now for this stock.
26

27 **MR. RINDONE:** So, in the absence of updated catch advice, the catch
28 advice that was recently implemented this year -- That's good
29 through 2025, and that will remain on the books until changed.
30

31 **DR. KILBORN:** They're not on the schedule to be reassessed?
32

33 **MR. RINDONE:** Not at this time, because we did it through an
34 interim analysis, and we can request another interim analysis with
35 the Science Center, and Katie won't like me to say this, but at-
36 will, and we will organize with them and work with them to try to
37 find the best time for -- Between their workload and ours, to be
38 able to bring an updated interim analysis back to you guys, you
39 know, if the council so requests, and so, you know, if you guys
40 wanted to see another one, say in 2024 or 2025, you know, you could
41 inform the council as much, whenever it is that you're prepared to
42 do so, and that would be your pleasure.
43

44 **VICE CHAIRMAN BARBIERI:** Right, and, to that effect, Josh, I mean,
45 this is something that -- You know, this kind of recommendation
46 can be included in our report to the council, as, you know,
47 something that we feel would be desirable, right, to be completed.
48 Harry Blanchet.

1
2 **MR. BLANCHET:** Hopefully a couple of quick questions. To the
3 Southeast Fisheries Science Center folks, how long would it take
4 to actually calculate the variances for the benchmark period and
5 the five-year, or three-year, projection periods, and I don't need
6 to have 95 percent confidence that they are different, and it may
7 be quite good if it's a 90 percent confidence that that is a
8 change, if it is a real change, and I would just like to know that.
9 If we can know that, this may be something we may want to readdress
10 today. If that's not doable today, then that would certainly be
11 something that would be worthy of inclusion at the next update for
12 something like this. Thank you.

13
14 **VICE CHAIRMAN BARBIERI:** Harry, I understand your sentiment there,
15 and I would say that, you know, we went through this agenda item,
16 and, because the SSC has already voted, right, on a motion that is
17 specific about this issue, I don't think that it would be suitable,
18 at this meeting, for us to revisit this issue, right, and, I mean,
19 this is additional analysis that we could review at some future
20 meeting, if that was the case, and so I just don't want to set
21 expectations that may not be realistic.

22
23 **MR. BLANCHET:** That's fine. That's fine. I just don't know -- I
24 mean, if it's as simple as summing up a couple of columns on a
25 spreadsheet that they already have available, that's easy, but, if
26 it's not, then I understand completely that that's -- It was just
27 trying to -- When I went back and looked at SEDAR 67, the expected
28 values and measured values for this combined video were not real
29 tight, and so, you know, I still would like to see what the change
30 is in the index. Thank you.

31
32 **VICE CHAIRMAN BARBIERI:** Thank you. Katie.

33
34 **DR. SIEGFRIED:** I respect the Chair's wishes that we support not
35 revisiting it and everything, but I just wanted to tell Harry, and
36 anybody else that wants to look it up, that Item 10b in the
37 materials has the index information, and there's a table that he
38 could quickly take a look at lower and upper confidence limits and
39 pretty quickly see that it's likely that they wouldn't be
40 statistically significantly different.

41
42 **VICE CHAIRMAN BARBIERI:** Excellent, Katie. Thank you so much, and
43 there we go, Harry. It's already there, and so that was a good
44 point to bring up, because it had escaped some of us. All right,
45 and so this completes Agenda Item Number X, and we are right on
46 time to do our break for lunch. We're going to then break now and
47 reconvene at 12:45, right, for Agenda Item Number XI, and Dr. Jack
48 McGovern is going to give us a presentation on the Southeast Region

1 Best Scientific Information Available Framework, right, that has
2 been in development for a while, and it's now ready for SSC review,
3 and so we're going to break here and reconvene at 12:45.

4
5 (Whereupon, the meeting recessed for lunch on September 28, 2023.)
6

7 - - -

8
9 September 28, 2023

10
11 THURSDAY AFTERNOON SESSION
12

13 - - -
14

15 The Meeting of the Gulf of Mexico Fishery Management Council
16 Standing and Special Reef Fish, Special Socioeconomic, and Special
17 Ecosystem Scientific and Statistical Committees reconvened on
18 Thursday, September 28, 2023, and was called to order by Vice
19 Chairman Luiz Barbieri.
20

21 **REVIEW: SOUTHEAST REGION BEST SCIENTIFIC INFORMATION AVAILABLE**
22 **FRAMEWORK**
23

24 **VICE CHAIRMAN BARBIERI:** All right, folks. We are running a couple
25 of minutes late, but if I could have committee members return to
26 the table, so we can resume our SSC meeting, the last part of it,
27 and I apologize for my slight tardiness to return to the table and
28 get the meeting started, but Dr. Nathan Vaughn is here. He's there
29 in the back, and he held me in conversation, a long conversation,
30 back there, and he prevented my -- Let the record show that this
31 happened.
32

33 We are now ready to go to Agenda Item XI, Review of the Southeast
34 Region Best Scientific Information Available Framework, and you
35 may remember that, maybe a couple of years ago, or last year at
36 some point, we had Dr. Patrick Lynch from the Office of Science
37 and Technology with NOAA Fisheries come and present to us the
38 national policy guideline on best scientific information
39 available, and, as part of that presentation, Dr. Lynch highlighted
40 the fact that each one of the regions were preparing their own
41 regional, or regionally appropriate, adaptations of this
42 framework, and our region has just completed, I guess -- Well, I
43 think I would call it the final draft at this point, and our charge
44 here today is to go through that framework, right, and Dr. Jack
45 McGovern is here to give us that presentation, and then we will
46 provide them with, or Jack, with, you know, any comments,
47 suggestions, recommendations, or concerns that we might have.
48

1 As part of this, also, I wanted to highlight that we have NOAA
2 General Counsel also here in the room and available to address any
3 legal questions that might be complicated, or difficult, for some
4 of us non-attorneys, right, and issues to understand, and Shepherd
5 Grimes, who is a very experienced natural resource attorney with
6 NOAA Fisheries, and we're glad to see you, Shep, back in the Gulf
7 and joining us for this conversation. With that, Jack, if you
8 have a presentation, and do we need to go through the scope of
9 work?

10

11 **MR. RINDONE:** Sure, we can. Shep is here, and so everybody be on
12 your best behavior, and so Dr. McGovern is here to detail the
13 development and features of the proposed framework for evaluating
14 BSIA in the Southeast. This has been under development for a
15 while, between SERO staff, the Science Center, and the Gulf and
16 South Atlantic staff, as a more refined best practices document
17 suited for the Southeast that was required after the national BSIA
18 document was released, and there is a hyperlink to that that's
19 footnoted into the scope of work that you guys can click on to
20 review.

21

22 So consider the information presented by Jack and provide feedback
23 on the draft, based on the data and analyses available for stock
24 assessments and projections completed in the Southeast and make
25 those recommendations that you have to Dr. McGovern and the
26 council, as appropriate.

27

28 **DR. JACK MCGOVERN:** Thank you, Mr. Chair. It's good to see you
29 again. I'm Jack McGovern, and I work at the Southeast Regional
30 Office. I oversee the Sustainable Fisheries Division there. As
31 Luiz said, we've been working on this BSIA framework for a while,
32 and it's based on a procedural directive from Headquarters that
33 indicate that all the regions should do this, and our intent is to
34 have one framework for all three of our councils, for the Gulf
35 Council, the Caribbean Council, and the South Atlantic.

36

37 This framework has been developed by the Science Center, and Clay
38 Porch is the lead on it, and he's assistance from John Walter and
39 Shannon and others, and then, at the Southeast Regional Office,
40 it's mainly been Andy and I working on it, and then Shep has been
41 the lead attorney on this document. It's also been sent to all
42 three council staffs. Carrie Simmons, John Froeschke, and Ryan
43 all commented and edited the document. For the South Atlantic,
44 John Carmichael and Chip Collier did, and then, for the Caribbean,
45 we didn't have any comments, and they were fine with it.

46

47 In the end, when this is finalized, and we'll incorporate any
48 comments and edits that the SSC has, and we're going to present it

1 to the South Atlantic SSC at the end of the month, if we're not
2 shut down, and it will wind up on the Headquarters website, the
3 Office of Sustainable Fisheries website, and then it could also be
4 an appendix to each council's regional operating agreement, if
5 they so chose.

6
7 The document is up, and so there are two main sections to this
8 document. The first section is general precepts, which is kind of
9 a background, and then the second section is the procedure for
10 BSIA determination, and that has three sections of procedures for
11 stock status determination, procedure for catch specification, and
12 then a chronological summary, leading to a final BSIA determination
13 by NOAA Fisheries.

14
15 What I will do is I will just walk through this document, and folks
16 can comment as we go through, and so the first paragraph, under
17 general precepts, has to do with Magnuson, and it states that the
18 Secretary will review the plan, or amendment to the plan, to
19 determine whether it's consistent with the National Standards,
20 other provisions of the Act, and other applicable law, and then it
21 also states that Magnuson requires the Secretary to initiate an
22 evaluation of proposed regulations, to determine whether they're
23 consistent with the fishery management plan or plan amendment that
24 act in any applicable law.

25
26 NOAA Fisheries has delegated these authorities to NOAA Fisheries,
27 and so NOAA Fisheries is ultimately responsible for determining
28 whether management measures that are done through the council and
29 the SSC are BSIA.

30
31 The second paragraph has to do with SSC scientific advice, and it
32 cites the NS 2 Guidelines, and it says that each scientific and
33 statistical committee shall provide its council ongoing and
34 scientific advice for fisheries and management, and decisions,
35 including recommendations for acceptable biological catch,
36 preventing overfishing, MSY, achieving rebuilding targets, reports
37 on stock status and health, bycatch, et cetera.

38
39 It also says that the SSC's scientific advice and recommendations
40 to its council are based on scientific information that the SSC
41 determines to meet the guidelines for best scientific information
42 and that the SSC may conduct peer reviews, or evaluate peer
43 reviews, to provide clear scientific advice to the council, and
44 such advice should attempt to resolve conflicting scientific
45 information, so that the council will not need to engage in debate
46 on technical merits, because debate and evaluation of scientific
47 information is the role of the SSC.

1 The third paragraph has to do with timeliness, and no. I messed
2 up. It's peer review. Peer review is the third paragraph, and it
3 talks about peer review is an essential part of determining whether
4 the scientific information used meets the criteria for BSIA, and
5 it states that the Secretary and each council may establish a peer
6 review process for that council for scientific information used to
7 advise the council about conservation and management.

8
9 Then the fourth paragraph is about timeliness, and it has to do
10 with using the best information available at the time, rather than
11 the best information that might be possible in the future, and it
12 says that mandatory management actions should not be delayed due
13 to limitations in the scientific information or the promise of
14 future data collection or analysis, and it says that FMPs must
15 take into account the best scientific information at the time of
16 preparation. The fact that scientific information concerning a
17 fishery is incomplete does not prevent preparation and
18 implementation of an FMP. That's the first section of it, and I
19 will stop there for any questions about that.

20
21 **VICE CHAIRMAN BARBIERI:** Thank you, Jack, because, I mean, it's
22 good to -- This is so much to digest and go through, right, and
23 going through this first section and then opening for potential
24 questions, or comments, from the committee. Nothing online, Jess?
25 Jack, that means that your presentation is so clear, right, that
26 the committee has absolutely no questions at this point, and so
27 let's move forward.

28
29 **DR. MCGOVERN:** Thank you, Mr. Chair. I will try to keep it clear,
30 and so the next section has to do with the procedure for BSIA
31 determinations, and the first paragraph there says that it's
32 ultimately the responsibility of NOAA Fisheries to make stock
33 status determination, through catch limits and other management
34 measures, and certify that they are consistent with BSIA. However,
35 the agency relies on input from the SSCs and the peer review
36 process.

37
38 Then National Standard 2 explains that scientific advice and
39 recommendations to the council are based on scientific information
40 that the SSC determines to meet the guidelines for BSIA, as
41 described in the regulations, and so, going down to Item Number 1
42 under the Procedure for Stock Status Determinations, it says -- It
43 explains that NOAA Fisheries is responsible for determining the
44 stock status of each stock in an FMP and that it should be done
45 through a formal stock assessment process, guided by the terms of
46 reference.

47
48 It goes on to say that SEDAR is often used in our region and that

1 a draft stock assessment -- It should be, when conducted by SEDAR
2 or another process, it should be peer reviewed, and it says that
3 NOAA Fisheries officially certifies the scientific information,
4 including the stock assessment, that it meets BSIA, based on the
5 record developed through the council process, including SSC review
6 of products.

7
8 Also, it says that the SSC is not required to make BSIA
9 recommendations for any particular piece of information, but it is
10 helpful in the process. I will stop there, if there are any
11 questions about that.

12
13 **VICE CHAIRMAN BARBIERI:** Any questions or comments from the
14 committee regarding this? Josh.

15
16 **DR. KILBORN:** Thank you. Maybe I'm not understanding, but does
17 this mean that only a full assessment can be considered best
18 science, and an interim, or an update, cannot be?

19
20 **DR. MCGOVERN:** I would ask Shep that question, because I think the
21 -- Well, I will defer to Shep.

22
23 **MR. SHEPHERD GRIMES:** Well, no. Any of them, I would say, could
24 be best available, but one of the things that I think is most
25 important, in thinking about these determinations, is that it's
26 best available for some purpose, that it's not a general
27 pronouncement that, oh, this is wonderful, and this is the best
28 available, and you can have one piece of information, and let's
29 say an interim assessment that might be the best available for
30 making stock status determination, but maybe there's some
31 questions related to the ability to project future yield, and you
32 wouldn't think it was best available for making catch level
33 recommendations.

34
35 That's just an example, but, you know, that's maybe the flexibility
36 that's in there, and I think focus on the purpose on the
37 information, because, when we make a legal best available
38 determination, it's in the context of a conservation and management
39 recommendation, a measure from the council, and that's what the
40 record needs to support, so that it should be focused on the end
41 goal a little bit. Thank you.

42
43 **DR. KILBORN:** Thank you.

44
45 **VICE CHAIRMAN BARBIERI:** Thank you, Josh, and then, if I may
46 follow-up here, Shep, real quickly, then that means that, if some
47 kind of analytical product is provided to the SSC for review, for
48 peer review, and we determine that information to be consistent

1 with the best scientific information available, but we do not feel
2 that it is appropriate to provide management advice --

3
4 **MR. GRIMES:** Well, that one is always a little thorny for me,
5 right, and, I mean, back in the day when I did the Gulf Council
6 and came to these SSC meetings, that's something I never favored,
7 right, and, I mean, don't tell me that it's best available and
8 then tell me that it's not suitable for management, because the
9 law tells me that, if it's best available, then that's what --
10 Your management decisions have to be consistent with that, and so
11 this ties back to my other point of I would be much more nuanced
12 than that, right, and what it is about it and not -- Because might
13 use it -- You know, maybe you could use it to -- You know,
14 information in the assessment to inform a management decision
15 related to a new size limit, but not for your ABC five years out.

16
17 **VICE CHAIRMAN BARBIERI:** I think about this in the sense that, you
18 know, the assessment process, when you think about it, is really
19 retroactive, right, and so you're really talking about the catch
20 and dynamics of the stock up to the terminal year, but the
21 projections are really about the future, predictions about the
22 future, that may not be completely tied, right, into the same level
23 of, I guess, uncertainty that you would have when you're looking
24 at data that you already have in hand and you're making inferences
25 based on that data, without having to project forward how that
26 data would translate into potential status of the stock or
27 management advice going into the future.

28
29 **MR. GRIMES:** Well, one other thing, while we're on this topic, and
30 it just came to mind. If you do get in a situation where you're
31 saying something does not constitute best available information
32 for some purpose, then you should have in mind some information
33 that does, right, because it's available, and, if you're like --
34 If you don't want to just pooh-pooh it general, you know, do you
35 have other -- You know, what else is out there? It may not be
36 good, but, you know, the law requires best available. If it's the
37 only think you have, then you have to make a decision, and you may
38 have to rely on it, even though you don't have a good feeling about
39 the quality of the information.

40
41 **VICE CHAIRMAN BARBIERI:** Thank you for that. I mean, that's a
42 good point to highlight there. Any other questions here? Katie.

43
44 **DR. SIEGFRIED:** Thank you, Mr. Chair. I just have a clarifying
45 question for Jack or Shep. On the screen, we have -- It says the
46 SSC is not required to make BSIA recommendations for any particular
47 piece of information, and Carrie and I were having a side
48 conversation about the previous agenda item, with respect to this,

1 and can I ask Shep maybe -- When it says "but it is helpful for
2 the SSC, or the cooperators in a process, to advise in that
3 regard", what is the difference between them saying we think this
4 index, or this interim, is the best scientific information
5 available, as opposed to advising in that regard? Like what's the
6 difference between the two?

7
8 **MR. GRIMES:** Well, I think you would have to ask your boss for
9 that, but, the way I read it, and in our discussions -- I mean,
10 it's information on it. If you have questions about, you know,
11 the veracity of some piece of information, or the detail of the
12 evidence, some context, then you can speak about that generally
13 and provide that information without trying to make an official
14 pronouncement that it is or is not best available for some purpose.

15
16 I think part of the message in that, and a lot of the message in
17 this framework, is that the ultimate best available scientific
18 information determination is a policy determination for the
19 Secretary of Commerce in approving something.

20
21 Now, like every other decision that they make, it's based on the
22 administrative record that we have all built up to that point, and
23 so it must be consistent with that, but, ultimately, that's where,
24 you know, the final best available determination is made.

25
26 **VICE CHAIRMAN BARBIERI:** Thank you for that, Shep, and then we
27 have one more question there online from Doug Gregory.

28
29 **MR. GREGORY:** Thank you, Mr. Chair. Good afternoon, Shep. It's
30 good to have you here. My question is normally we do a stock
31 assessment, and we always, whether it's our purview or not, we
32 always make a declaration of best scientific information
33 available, and stock assessments -- At least I assume that the
34 latest one that we've accepted displaces the old one, and the old
35 assessment is no longer appropriate, but then we moved from
36 benchmark to updates and operation, and now we have interim
37 assessments.

38
39 The interim assessment doesn't get the same scrutiny and analysis
40 and data inputs that a stock assessment does, but, if we were to,
41 like we almost did this morning, say an interim stock assessment
42 is the best scientific information available, does that mean that
43 the previous full assessment is being displaced by the interim
44 assessment, or is the previous full assessment still qualifying
45 for being the best available scientific information? I never
46 thought about that until today, and I hope that question is clear.
47 Thank you.

1 **MR. GRIMES:** Hi, Doug, and thanks. That is a tough one. You know,
2 on some level, there is some intuitive appeal to that, that it has
3 displaced it, but I'm going to fall back a little bit on what I
4 said already, in that I would say, for what specific purpose,
5 right, because I could see, and I think I have heard arguments at
6 various SSCs about, well, you know, looking back, the old
7 assessment has some -- You know, this part of it was better,
8 especially if you've seen a change in methodology between
9 assessments, and you would make the argument for why an old one
10 might still be best available, but I think, you know, as a general
11 matter, the latest one is the most recent, and it's going to have
12 the -- You know, it's going to be more comprehensive, because it
13 isn't like you ditched all the data from the past assessment, and
14 you rolled it forward into the next one and added to it.

15
16 I wouldn't want to say that that's absolutely true and foreclose
17 the possibility that you could have a new one be best available
18 and then maybe reach back and find, you know, some piece of the
19 other one that was still better or something, and I just don't --
20 I'm the lawyer, and I don't want to foreclose my options, right,
21 and so I wouldn't want to say that's universally true, but there
22 is some obvious appeal to that argument.

23
24 **VICE CHAIRMAN BARBIERI:** That makes sense. Thank you, Shep. If
25 there are no other questions, immediate questions, for Jack, then,
26 Jack, go ahead.

27
28 **DR. MCGOVERN:** Thank you, Mr. Chair. We'll move on to 1a, and
29 that deals with what would be covered in the peer review
30 assessment, and it says that the peer review assessment should
31 evaluate the overfishing status determination criteria that are
32 specified in an FMP, overfished criteria, and then also technical
33 merits of potential revisions to the status determination
34 criteria, such as proxy for MSY, harvest control rules, and other
35 management actions, per the terms of reference of the assessment.

36
37 1b talks about the peer review and that it may be conducted by the
38 SSC or another clearly-specified process that is more or less
39 independent of an SSC and may involve other council entities, such
40 as plan teams, and Item c says it's unnecessary for the SSC to
41 repeat previously-conducted detail reviews, such as one conducted
42 by the CIE. Rather, they should focus on reviewing information
43 that has not already been peer reviewed.

44
45 Item d is per National Standard 2. If an SSC disagrees with the
46 findings or conclusions of the previous peer review, or part of
47 it, the SSC must prepare a report outlining the areas of
48 disagreement and the rationale and information used by the SSC for

1 its determination, and the report must be publicly available.

2
3 Item e suggests that the Science Center establish a point of
4 contact to the SSC to support discussions regarding assessments
5 and other analyses and to help determine the extent to which
6 additional work might be warranted and then to communicate
7 decisions about stock status and BSIA determinations. It indicates
8 that, if there are NOAA Fisheries representatives on the SSCs,
9 they can't fulfill this role.

10
11 If a peer review, whether conducted by the SSC, CIE, or other body
12 identifies substantive deficiencies, and they cannot be addressed
13 immediately, then remedial measures should be provided in writing
14 to the lead assessment agency and cooperating body, and the lead
15 agency and SSC should coordinate together to determine the extent
16 to which those concerns need to be addressed before the product
17 can be used for scientific advice.

18
19 Adjustments that are limited in scope, which can be addressed by
20 the SSC or other designated folks, should be done in a timely
21 matter and attempted, when feasible. Otherwise, the SSC should
22 decide whether the collection of information to it at this time is
23 sufficient for management advice, and I will stop here.

24
25 **VICE CHAIRMAN BARBIERI:** Thank you, Jack. Any comments or
26 questions regarding this last part of the framework that Jack just
27 reviewed for us?

28
29 **DR. MCGOVERN:** Should I move on, Mr. Chair?

30
31 **VICE CHAIRMAN BARBIERI:** I have -- I think, under Item g, and
32 correct me if I'm wrong, if I'm misunderstanding what's here, it's
33 that, if the SSC determines that some analytical product is not
34 consistent with BSIA, the Center can overrule that determination,
35 and is that correct?

36
37 **DR. MCGOVERN:** The way I understand it, Mr. Chair, is that if the
38 SSC says it's not BSIA, and the Science Center does, then the
39 Science Center -- What it says here, and Clay had a heavy hand in
40 this part, but he says that they should reconsider, as a basis for
41 catch limits or other management recommendations, to avoid
42 potential need for additional management action by NOAA Fisheries,
43 and so they bring it back to the SSC and say, you know, look at
44 this again, and what do you think, and, you know, I think there
45 would be discussion between the Science Center and the SSC about
46 what to do and what steps to take.

47
48 **VICE CHAIRMAN BARBIERI:** Right, and that, to me, seems logical,

1 and so, to put you on the spot a little bit here, Shep, can you
2 explain to me how do you think that this aligns with the guidelines
3 provided in NS 2 regarding the role of the SSC in making that
4 recommendation?
5

6 **MR. GRIMES:** Well, I mean, think of it all in the context and the
7 structure of Magnuson and the council, right, and this body is an
8 advisory body to an advisory body to the Secretary of Commerce,
9 right, and the Secretary of Commerce is ultimately -- Now, an
10 authority has been delegated from the Secretary down through the
11 agency, and, ultimately, usually it's just the Fisheries Service,
12 but not always, right, and those ties are always there to the
13 Secretary's office, but that's where the determination is made,
14 and you basically have a series of recommendations along the way.
15

16 I will go back to what I said before, and everything we do, if we
17 end up in court, is documented in our administrative record, right,
18 and our decisions must be consistent with the fact-finding that we
19 conducted and documented in that administrative record, and, if we
20 go through and every advisory body we have disagrees, and is making
21 a different recommendation, that's not a strong place to be in,
22 right, and our record is not guiding our decision, necessarily, in
23 a particularly clear way, and that makes the decision that much
24 more subject to criticism.
25

26 **VICE CHAIRMAN BARBIERI:** Right, and that makes sense, right, and,
27 again, I'm just trying to avoid confusion, because this is
28 difficult at times, and so, if we scroll back, under General
29 Precepts, and we go to Paragraph 2, the paragraph reads that the
30 National Standard 2 guidelines require, quote, each scientific and
31 statistical committee shall provide its council ongoing scientific
32 advice for fishery management decisions, including recommendations
33 for acceptable biological catch, preventing overfishing, MSY,
34 achieving rebuilding targets, reports on stock status and health,
35 bycatch, habitat status, socioeconomic impacts of management
36 measures, and sustainability of fishing practices.
37

38 They further stipulate that, quote, SSC scientific advice and
39 recommendations to each council are based on scientific
40 information that the SSC determines to meet the guidelines for
41 best scientific information available, as described in Paragraph
42 a of this section. I am trying to understand like how can we abide
43 by NS 2, which was developed as a National Standard Guideline by
44 the agency, but not provide our recommendations based on the BSIA.
45

46 **MR. GRIMES:** I don't know that I understood that question, but, I
47 mean, I think, ultimately, that not everybody agrees, and there
48 are just differences of opinion on things, and, in this one, in

1 the text you referenced, the SSC's scientific advice and
2 recommendations to its council, right, because that's what the SSC
3 -- It advises its council, and it gives its opinion, and they're
4 based on the information that -- I mean, basically, that's just
5 saying you would have looked at the information and say it meets
6 the guidelines for best available, and we're using it to support
7 our recommendation, and here's what that recommendation is.

8
9 Now, that doesn't necessarily mean that the Science Center, or the
10 Secretary's office, or whoever else in the process, is going to
11 agree with that, and they would present their contrary argument,
12 and, you know, you can say that all of this information that meets
13 the guidelines for what is best available -- The guidelines are
14 not prescriptive, in terms of what you're finding, and it's so
15 much about process and consideration and openness and transparency
16 and timeliness.

17
18 Those are factors, considerations, a lot of process-driven stuff,
19 and you could have all this information, and all of it went through
20 the same process, and it could meet those guidelines, and yet reach
21 very different conclusions, and you have to pick one, and you might
22 not agree on the same one, and, ultimately, there is always the
23 next level of decision-making.

24
25 **VICE CHAIRMAN BARBIERI:** Thank you, Shep. Yes, that helped me
26 better understand, right, the scope of this. Thank you, Jack. Go
27 ahead.

28
29 **DR. MCGOVERN:** I think we're down to 1h now, and so, at this point,
30 the SSC has recommended, or said, that it considers something that
31 is BSIA, an assessment, and the Science Center agrees, and then,
32 after any reviews, the Science Center records the assessment into
33 a centralized repository system, and, right now, that is the
34 Systems Information System, which I will refer to as SIS, and, by
35 locking the record into SIS, NOAA Fisheries indicates that the
36 assessment provides information that is consistent with BSIA, and
37 this is done -- Usually this is done by the Science Center, and
38 they enter it into SIS after -- I talked to the folks at the
39 Science Center, and it's done after they get the SSC report from
40 the Science Center.

41
42 Now, the next step is, if there's a change in stock status, then
43 we at the Southeast Regional Office -- We work with Headquarters
44 to draft a decision, and then that decision is cleared through the
45 Regional Administrator and by the Assistant Administrator, and we
46 send a letter to the council if the stock is overfishing or
47 overfished, and John Carmichael, in his edits, has also suggested
48 that we send a letter if the stock status change is healthy, and

1 so we'll do that, and he has also requested that we send a decision
2 memo, too.

3
4 If it's overfished or overfishing, then SERO will send a letter to
5 the council, indicating that management action is needed, and then
6 everything that's entered into SIS is summarized on a website that
7 is housed by the Office of Sustainable Fisheries, and I have a
8 link to it, and so all the assessments in the whole country are
9 housed there, and so you can see what is in SIS, and then we work
10 with Headquarters for quarterly and annual updates to the report
11 to Congress on stock status. I will stop there, before I get to
12 the next section.

13
14 **VICE CHAIRMAN BARBIERI:** Any questions for Jack and Shep? Katie.

15
16 **DR. SIEGFRIED:** Thank you, Mr. Chair. I have a question about the
17 stock status determination. We've argued about that here, and at
18 other SSC meetings that I've attended in other regions, as far as
19 whose decision it is to set benchmarks, basically, and so, from
20 reading this, it sounds like it does -- That it is NOAA Fisheries
21 who makes a determination about stock status.

22
23 In order to make a determination about stock status, they would
24 have to decide on the denominator of the status equation, right,
25 which is the SPR ratio, and Ryan and others have argued that's the
26 council's job to set the SPR ratio, or proxy, and this doesn't say
27 that, and so I wonder if anybody can address that.

28
29 **VICE CHAIRMAN BARBIERI:** Shep, please.

30
31 **MR. GRIMES:** Well, stock status -- The agency is required to report
32 to Congress on the status of stocks and make specific
33 determinations as to the overfished and overfishing status, and
34 the -- I don't know if it's the word, but the benchmark that they
35 must use for those determinations is what is adopted in the FMP.

36
37 Even if you have a new assessment come out, and it recommends,
38 let's say, you know, a different MSY proxy, or different biomass,
39 whatever, you would make the determination, for the purposes of
40 the report to Congress, based on what's in the FMP that's written
41 into the statute, and it's not a regulatory thing, and we have no
42 flexibility on that. Then, after the new reference point is
43 adopted through the regulatory process, then the agency would make
44 a determination relative to that new adopted reference point.

45
46 **DR. SIEGFRIED:** A follow-up?

47
48 **VICE CHAIRMAN BARBIERI:** Yes, a follow-up, Katie, please.

1
2 **DR. SIEGFRIED:** What if there isn't one set yet? Isn't that then
3 NOAA Fisheries' job to say what it should be?
4

5 **MR. GRIMES:** Well, those are mandatory elements of every FMP, and
6 it should be in the FMP, but, if we didn't have anything in the
7 FMP, yes, I guess we essentially would make it up, and it would be
8 approved at the agency level, but everybody would have input on
9 that, presumably, through the process, but, ultimately, yes, it
10 would be a NMFS decision, as delegated from the Secretary, I
11 suppose.
12

13 **VICE CHAIRMAN BARBIERI:** Katie, I think, right now, the procedure
14 that we have, and I don't remember the amendment, the council
15 amendment number, right, where we have stock status determination
16 criteria for all the stocks --
17

18 **MR. RINDONE:** It was Amendment 48.
19

20 **VICE CHAIRMAN BARBIERI:** 48, yes, the Reef Fish Regulatory
21 Amendment 48, right, that specifies that, in this case, the SSCs
22 would make a recommendation to its council, based on whatever is
23 provided by the Science Center, and so there's a new assessment
24 where there is no already stipulated SPR proxy, for example, for
25 MSY, for stocks that just haven't been assessed and there is no
26 proxy MSY, right, and so the Center could provide either an option
27 there, or a couple of different options, and think about scamp and
28 what happened there.
29

30 Then the SSC either accepts that recommendation or makes another
31 one, right, and that recommendation then from the SSC is used to
32 develop stock status determination and make management
33 recommendations and catch advice, and then that goes to the
34 council, and so, if the council accepts that, now that's going to
35 be included in an FMP, through an amendment, right, and that gets
36 reviewed by the Secretary. A follow-up?
37

38 **DR. SIEGFRIED:** You can stop me if this is not useful, and I'm not
39 on the committee, but it's been my whole career, and I don't mean
40 to single out just Ryan, and every -- You know, this is what I've
41 heard across any council I have ever -- Any council meeting I've
42 ever attended, but that's not as clear to me, that it's a council
43 decision what that proxy should be, and it sounds like it's an SSC
44 recommendation, and, yes, we have to follow what's in the FMP, but
45 that there's scientific advice that could potentially change
46 what's in the FMP, but the SSC can make recommendations about it.
47

48 By my reading of this, as a scientist and not a lawyer, it sounds

1 like it's NOAA Fisheries' job to recommend that and then decide,
2 once they've gotten peer review and SSC recommendations, and it
3 doesn't -- It's not -- That's why I was asking, because it's often
4 said, and we've even discussed it here, and like scamp is something
5 that comes to mind, and it was in a complex, but it was never
6 decided individually, and so we've had these discussions even at
7 this table.

8
9 **VICE CHAIRMAN BARBIERI:** That should be explicit, the procedure,
10 right, in Regulatory Amendment 48 that we have in place right now,
11 to follow the steps that I described, but I can see your point,
12 right, in terms of whether it's the council that makes that
13 decision or it's the agency, and I think that the presentation
14 that we received from Rick Methot on the latest update on the
15 national guidelines, the stock status determination, right, is
16 explicit about the role of the councils in setting -- Really being
17 the body that makes that recommendation to the Secretary of
18 Commerce, in terms of the proxy for MSY, because that is related
19 to some level of -- Not risk, but it's a level of management --
20 Risk tolerance for management, and it can be more or less tolerant
21 of the probability of overfishing, and that's what the proxy MSY
22 would be related to.

23
24 If you go from a 30 percent proxy of MSY to 40 percent, you are
25 being more conservative, and that regards then risk tolerance for
26 management, and that is -- I think, in that -- You know, Rick
27 Methot went through that with us here, and I agree with Katie that
28 this here doesn't read that way, and it might be just a semantics
29 issue, Shep, but --

30
31 **MR. GRIMES:** It seems that maybe you're being a little sensitive
32 about it, it seems, and it's like any of it, right, and it goes
33 back to the function of the SSC advises the council, who then
34 advises the Secretary, and it works its way up through. If you
35 thought -- You know, if the council got a recommendation from its
36 SSC -- Well, let me back up, first.

37
38 I think, in the case of proxies, right, once you're talking about
39 selecting a proxy, then you've automatically admitted that there
40 is some uncertainty. Let's say you have an assessment come out,
41 and the assessment can't actually estimate it, and it doesn't give
42 you an estimate of MSY, and you have to pick the proxy that you're
43 going to use with it, and so, with that uncertainty, then there is
44 discretion in choosing among those proxies. The science has not
45 provided you a clear answer at that point, or at least, arguably,
46 that's our starting point.

47
48 Then the council has, and the SSC, whoever, everybody in the

1 process then has to put more flexibility in justifying their
2 position and picking each proxy, and I would say, you know, a
3 council -- Is the council absolutely bound to the recommendation
4 of the SSC? No, and it never is, except in the case of the ACL
5 and ABC thing, and that's the only place in the statute where the
6 council is precluded from -- Or is required, absolutely required,
7 to be constrained by the advice of the SSC, but, again, it's then
8 in the record.

9
10 Do I want to defend a decision of the Gulf Council that is totally
11 inconsistent and beyond the advice of its SSC? No, adamantly,
12 but, if the agency has disagreed with this SSC, and then has added
13 on to that record afterwards, then it might be a different picture,
14 but I think, you know, it's at each level through the process where
15 you have those interactions.

16
17 **VICE CHAIRMAN BARBIERI:** Right. Ryan has a point, Jack, and then
18 we'll go to you.

19
20 **MR. RINDONE:** So, in the Act, Section 303 on the contents of
21 fishery management plans, under Paragraph (a) for required
22 provisions, it says that any fishery management plan which is
23 prepared by any council, or by the Secretary, with respect to any
24 fishery shall -- Then Subparagraph (3) says assess and specify the
25 present and probable future condition of, and the maximum
26 sustainable yield and optimum yield from, the fishery, and include
27 a summary of the information utilized in making such
28 specifications.

29
30 It's based on that, where it's up to the council to do this as
31 part of an FMP, if the council -- This was always our
32 interpretation anyway, is it's up to the council to specify this
33 within an FMP, which, at this point, the council has for all
34 managed species, or our council has anyway for all managed species,
35 but, in the event that that hadn't happened, then presumably it
36 would be the Secretary that would specify something in that vacuum,
37 but we're not currently in a situation in the Gulf where there is
38 a vacuum, in terms of a proxy or an otherwise defined value for
39 MSY for any species that's managed federally in the Gulf.

40
41 **VICE CHAIRMAN BARBIERI:** Jack, just one second, and, to that point,
42 I mean, I wasn't being sensitive about this, and I just want to
43 get clarity, because Katie is right that this has been a discussion
44 ongoing for at least twenty years, right, about proxies for MSY
45 and what's the role of the scientific advice, versus the council
46 management role, right, and I think that the new guidelines, or
47 the new best practices, right, that are recommended by the agency
48 for stock status determination is explicit about the fact that the

1 determination of the proxy for MSY really rests with the council,
2 but that can be under advisement from its SSC, and it can be.

3
4 In our Amendment 48, we were very explicit about this, and I
5 remember, because I gave that presentation to the council about
6 Amendment 48, and we were very explicit there in requesting the
7 council that delegated authority to provide that recommendation,
8 through a stock assessment review, for a proxy for MSY, which they
9 would have the opportunity to agree with or disagree with, and we
10 basically stipulated the process there explicitly, and I think
11 that it falls under those guidelines, you know, without a problem.
12 Did that make sense?

13
14 **MR. GRIMES:** I'm not sure. I mean, I got most of that.

15
16 **VICE CHAIRMAN BARBIERI:** Carrie, please.

17
18 **EXECUTIVE DIRECTOR SIMMONS:** Thank you, Mr. Chair. Just taking a
19 little step back from the final version, through the whole stock
20 assessment process, don't forget that we have terms of reference
21 and scopes of work. Within the terms of reference, we say this is
22 what it is currently for the stock, and, okay, Science Center,
23 should we look at this percent, or that percent, and we have kind
24 of a range, and I think the SSC reviews all of that, even before
25 we give it to the Science Center.

26
27 I think that would be the time that we start really trying to come
28 up with a range that we might want to look at, or something like
29 that, and investigate, and then, again, we revisit it with the
30 scope of work, and so I think there's some pieces missing, maybe,
31 from this discussion, perhaps.

32
33 **DR. SIEGFRIED:** That's a good way to put it. I think all of this
34 is extreme, right, and all of this is dictated in case we can't
35 come to an agreement, and, in reality, we almost always do. I
36 mean, I don't -- I'm sure there's been cases, and maybe not in my
37 tenure here, but where the Secretary has had to override, but, I
38 mean, the whole point of us coming and talking about it here is so
39 that doesn't happen, and I want to be part of that process, and we
40 want to provide scientific justification for anything we suggest.

41
42 I am only asking because I've heard it's the council's prerogative,
43 and we're getting this new language, and I'm trying to understand
44 it for myself, and so I think all of the negotiations, and all of
45 the justification for considering something new, is perfectly
46 within the range of what we want to provide, and I just hadn't
47 heard this language this way before.

1 **VICE CHAIRMAN BARBIERI:** Jack, please.

2
3 **DR. MCGOVERN:** I just wanted to sort of provide an example of how
4 I've seen it work with the FMSY proxy, and like, for gag in the
5 South Atlantic, the assessment was run, and I think F 40 percent
6 was preferred, and the SSC, the South Atlantic SSC, recommended a
7 40 percent SPR. It went to the council, and it was an alternative
8 in the amendment, and they selected F 40 percent, and then, you
9 know, in the last paragraph of this framework, it kind of addresses
10 that.

11
12 It says, if the council makes a decision that is inconsistent with
13 the advice of its SSC, such as the choice of an MSY proxy, NOAA
14 Fisheries will determine if it is consistent with BSIA when
15 reviewing the council's recommendation.

16
17 **VICE CHAIRMAN BARBIERI:** Right. Exactly. Thank you for that
18 clarification, Jack. Shep.

19
20 **MR. GRIMES:** I will give one other context, because I think you're
21 thinking of -- You have a specific context in mind, I think, and
22 I am lacking that, and so you mentioned scamp and yellowmouth,
23 and, again, South Atlantic, and so that just came out, and that
24 was one where scamp and yellowmouth were assessed as a complex,
25 right, and scamp and yellowmouth are both in the Snapper Grouper
26 FMP, and they're in that management unit, but they're in there
27 individually, and they have status determination criteria for
28 individual species and not as a group, right, and the MSY proxies
29 for those, I think, were 30 percent SPR proxies, and the assessment
30 came out and recommended a 40 percent, right, but it recommended
31 the 40 percent for -- Again, now this is a complex, and it's not
32 those two, and so there are a lot -- You then have to align the
33 FMP, and that's sort of the stock assessment process driving
34 management, then now we have to align the management units, or the
35 species, around this complex, and we have to specify the new MSY
36 value.

37
38 You had a recommendation from the assessment, adopted by the SSC,
39 which was more conservative than had ever been done for either
40 stock in the past, but, you know, that's working its way through
41 the process.

42
43 **VICE CHAIRMAN BARBIERI:** Exactly, and, just like Katie said, you
44 know, most often, those issues are discussed here, you know, with
45 the intent of getting them resolved and getting an agreeable setup
46 that is acceptable by all parties, and I think that's exactly what
47 happened in this case. Sorry, Jack, for all the -- But this is
48 interesting stuff, and so go ahead.

1
2 **DR. MCGOVERN:** Are we ready to move on? Okay. Going to Item 2,
3 the procedure for catch specifications, it states that the SSCs
4 are responsible for recommending an OFL and an ABC, based on the
5 stock assessments and the ABC Control Rule, and then I will just
6 go down to a, and it says the OFL recommendations from the
7 council's SSC should be based on peer-reviewed information and
8 that it should be risk neutral and the best estimate from the
9 assessment.

10
11 The ABC recommendation should be reduced from the OFL and
12 commensurate with the degree of scientific uncertainty with ABC,
13 and the SSC may depart from the ABC Control Rule as a basis for
14 its recommendation, but it must document the rationale for doing
15 so.

16
17 Then, in cases where proxies for MSY are needed, the SSC should
18 advise the council on the proxies most likely to produce OY.
19 Additional projections may be requested after the peer review to
20 compute OFL and ABC contingent on proposed management changes, and
21 the SSC should work with the lead assessment agency to document
22 the projection specifications and discuss their implications for
23 rebuilding and catch levels. Then each step should be documented
24 and traceable, and so I will stop there.

25
26 **VICE CHAIRMAN BARBIERI:** Thank you, Jack. Any questions? Jess,
27 you're following, right, what might be coming from the folks
28 online? I think no questions here, Jack. Tom.

29
30 **DR. FRAZER:** Just seeking some clarification on Item a there, and
31 can you define "risk neutral"?

32
33 **DR. MCGOVERN:** That is without having like an adjustment for
34 scientific uncertainty to it, and the ABC is adjusted for
35 scientific uncertainty through the ABC Control Rule and that sort
36 of thing.

37
38 **VICE CHAIRMAN BARBIERI:** Thank you, Jack. Go ahead.

39
40 **DR. MCGOVERN:** Okay. Next is the chronological summary and kind
41 of the steps that are gone through, and the final step is for NOAA
42 Fisheries to approve the whole thing, and some of this repeats
43 what we've gone over already.

44
45 Item a is the SSC receives the scientific information, and they
46 consider the information and seek clarification, where necessary,
47 and Item c is the SSC considers the information, if the information
48 is consistent with BSIA. If consistent, it makes recommendations

1 based on the available information. If it's not sufficient for
2 overfishing or overfished, or the status determination criteria,
3 or for supporting catch level recommendations, then it can look to
4 other sources of information, such as peer-reviewed literature or
5 ABC Control Rules. Then Item iii is review the scientific
6 information, peer reviews, and SSC recommendations, to ensure the
7 guidance for BSIA is satisfied.

8
9 For a BSIA determination for assessment of stock status, the
10 Science Center reviews the assessment, peer review, and SSC
11 recommendations and determines if BSIA -- The Science Center
12 records the information in the Species Information System, and
13 it's done after the SSC completes their report. If there is a
14 change in stock status, then SERO works with Headquarters to
15 develop a decision memo that is cleared through the RA and the
16 Assistant Administrator, and we send a letter to the council. Then
17 the report to Congress documents the stock status.

18
19 Then the last step is -- This is NOAA Fisheries' final approval,
20 and NOAA Fisheries reviews all the council-developed conservation
21 and management actions, including catch specifications, and
22 certifies that the specifications are consistent with the Magnuson
23 Stevens Act and the National Standards and other provisions and
24 other applicable laws, and then this is done by GC and us, and so
25 then, if we get certification, a certification letter from the
26 Science Center, after it's all done, we send the amendment to the
27 Science Center, and they review and provide us any recommendations
28 for changes.

29
30 Then, if the council makes a decision that is inconsistent with
31 the advice of its SSC, it will then determine if the decision is
32 consistent with BSIA, and then, if the agency determines that the
33 council's recommended action is not consistent with BSIA, the
34 council may revise the action and submit it for review. If the
35 council fails to submit a revised action, NOAA Fisheries can
36 develop a secretarial plan, which is very rarely done.

37
38 **VICE CHAIRMAN BARBIERI:** I think this completes, right, and that's
39 the whole document there, and so any additional questions or
40 comments or clarifications that we may get from Jack and Shep
41 regarding the Southeast Regional Framework for BSIA? I guess no
42 more questions or comments, and we just want to thank you, Jack,
43 for coming over and presenting this to the SSC, and, Shep, for you
44 to come and help us -- You know, walk our brains through some of
45 these meandering roads of legalese that are not always clear to
46 us.

47
48 **MR. GRIMES:** Thank you. It's nice to be here, and I will try to

1 keep Crabtree in line again, for old time's sake.

2

3 **VICE CHAIRMAN BARBIERI:** Good luck with that. By the way, Jack,
4 just so we know, is there a time period for us to provide -- You
5 know, if the committee, sleeping on this, might have some editorial
6 suggestions, or -- You know, I'm not envisioning any, but thinking
7 that some people might want to submit some written comments, and
8 should we just send them to you, and by when?

9

10 **DR. MCGOVERN:** That would be great, and I would appreciate any
11 comments or suggestions. I am supposed to present to the South
12 Atlantic SSC on October 25, and so I would really like to be able
13 to incorporate any comments from this SSC in the document before
14 showing it to them.

15

16 **MR. RINDONE:** What is that data again?

17

18 **DR. MCGOVERN:** October 25, and I don't know when their briefing
19 book is. I'm going to call Judd tomorrow and find out, and I can
20 let you know, Ryan.

21

22 **MR. RINDONE:** We'll say two weeks before that date, just to give
23 you time to fold anything in.

24

25 **VICE CHAIRMAN BARBIERI:** That's great. Jack, it's great seeing
26 you, and we're glad that you are healthy again.

27

28 **DR. MCGOVERN:** I'm sort of healthy. Thank you very much, Mr.
29 Chair. It's always a pleasure to be with you. Thank you, SSC.

30

31 **VICE CHAIRMAN BARBIERI:** All right, and so, after this discussion,
32 we are ready to move on to our next agenda item, which is Agenda
33 Item XII, Incorporating Social Science Theory and Methods into
34 Ecosystem Assessments, and David Griffith has generously, and
35 graciously, agreed to put together this presentation for us and to
36 walk us through some of these things that, you know, not all of us
37 are familiar with, and so we greatly appreciate, Dave, you coming
38 to give this presentation. Ryan, can you read us the scope of
39 work?

40

41 **INCORPORATING SOCIAL SCIENCE THEORY AND METHODS INTO ECOSYSTEM**
42 **ASSESSMENTS**

43

44 **MR. RINDONE:** I can, and Dr. Griffith was kind enough to help me
45 with this section, and so thank you for that. He's going to
46 present how to incorporate social science theory and methods into
47 ecosystem assessments, based on the notion that human activity can
48 have direct impacts on fish stocks, and so Dr. Griffith will

1 discuss some of the ways that social scientists have contributed
2 to fisheries management, including stock assessments, focusing in
3 particular on the growing trend of considering fish and shellfish
4 resources in terms of ecosystem-based management. The
5 presentation will discuss methods of incorporating social science
6 methods into impact assessments, stock assessments, and other
7 management initiatives, and the examples given will include more
8 traditional methods of data collection and analysis, such as
9 surveys, but also introduced a variety of less conventional methods
10 of social sciences used to assess human behavior, cognition, and
11 activity. You guys should consider the information presented and
12 make recommendations to Dr. Griffith and the council, as
13 appropriate. It's your floor.

14
15 **DR. GRIFFITH:** Thanks, Ryan, and thanks, Luiz. I appreciate that.
16 I hope I can live up to that little introduction. I really just
17 have a couple of objectives here, and one is to talk about a few
18 different methods. There are many methods that social scientists
19 use, and not too much about theory, but a little bit about
20 overarching theory in the social sciences, but so I want to
21 introduce just a handful of methods that I have used before, but
22 that don't exhaust the variety of methods that social scientists
23 use, and then also just talk about this whole business of
24 integrating social science into stock assessments and things like
25 that.

26
27 I want to really thank Molly and Katie and Lisa for including me
28 in the shrimp stock assessment, because, last week, we discussed
29 this, and it was really interesting to see how we could work social
30 science and economic information into the shrimp stock assessment,
31 which we're still working on, by the way.

32
33 We've been learning more about these kind of integrated approaches
34 to fisheries management. Here at the SSC, you know, we have an
35 ecosystem analysis that emphasizes trophic relationships and food
36 web networks, but, when they presented that, they were interested
37 in including humans in those networks as well, and Steven here
38 talked about agent-based modeling, that showed, among other
39 things, how fishers' behavior can influence fishery-dependent data
40 and potentially skew stock assessments.

41
42 We learned about management strategy evaluation, which considers
43 relations among different management alternatives relative to
44 their objectives, either empirically or via simulations, and
45 social scientists, of course, have been talking about integrating
46 information for a long time, and we tend to think of human behavior
47 as embedded in these wider social and economic and cultural
48 contexts, and, you know, we think of things pretty much

1 holistically, and so we have a lot of different theories and
2 methods that reflect this, including systems theory, multi-scalar
3 analysis, and network analysis, behavioral economics, and cultural
4 ecology.

5
6 Now, I have this quote from the biochemist Erwin Chargaff, and one
7 of the most insidious and nefarious characteristics of scientific
8 models is their tendency to take over and sometimes supplant
9 reality, and I want to show a little clip from the movie *Back to*
10 *School* that kind of reflects this. You might have to listen to a
11 little add first for pizza or something, but -- It's just about
12 three minutes long.

13
14 (A video clip was presented and was not transcribed.)

15
16 **DR. GRIFFITH:** We can be skeptical of these models, and, you know,
17 in a lot of cases, we know that models are based on assumptions,
18 but in turn are based on political positions or myths or
19 exaggerations, and so we have to be careful with that.

20
21 One case in fisheries, of course, is the tragedy of the commons,
22 and it tends to dismiss community-based management in favor of
23 resource privatization, and I think that Eleanor Ostrom showed
24 that when she wrote a lot of stuff that eventually won her the
25 Nobel Prize in Economics, and there are a lot of scientific models
26 about the natural world about ecosystems that are based on systems
27 theory, but systems theory, you know, often presents things as
28 though there is these feedback loops, and everything is kind of a
29 closed system, and systems are hardly ever closed, you know, and
30 this is one of the things that I am talking about putting things
31 within their larger social, economic, and natural context.

32
33 Of course, we do have to use scientific models, because they're
34 necessary to represent trends and interactions and so forth when
35 we have limited data. In some cases, changes in stock, you know,
36 may be due to social factors that are not normally considered in
37 stock assessments, and I think, when we were considering the shrimp
38 landings last week, imports played a very large part of things
39 like the consolidation of the fleet, and that affected landings,
40 and so there's a lot of things to that.

41
42 Social scientists often rely on data from the census, but we often
43 develop our own datasets, because we don't think a lot of those
44 standard datasets are reliable, and so, for example, in tropical
45 forest fisheries, which are very important in Puerto Rico, and
46 this is fishing that goes on in the mangrove forests, they tend
47 not to be captured in the landings data in the Caribbean, and,
48 also, part-time fishing in the South Atlantic and Gulf states is

1 often underreported, and this is when people -- You know, they are
2 commercial fishermen, but they shift those livelihoods into other
3 livelihoods, you know, and I'm going to talk a little bit about
4 that later.

5
6 Inasmuch as human behavior influences ecological dynamics, a
7 variety of natural environments and processes, including fish
8 populations, and understanding that human behavior can be very
9 useful in ecosystem assessments, but, with the notable exception
10 of a reliance on economic data, method, and theory, we really
11 haven't taken advantage, I don't think, of the full range of social
12 scientific data, methods, and theory in stock assessments and other
13 fishery management actions.

14
15 I'm going to talk, and I'm going to just give some overview about
16 some of the methods that we use, some that are conventional and
17 some that are a little less conventional, and then I will talk a
18 little bit about converting qualitative data into quantitative
19 data, because a lot of our social scientific data is qualitative,
20 and I know it's useful to convert into quantitative data. I do
21 mention some social scientific theories at the end, but really
22 only briefly, because they are very extensive.

23
24 We often just want to assess the lay of the land and figure out
25 where things are in a fishing community that reflect the fishing
26 behavior in that community, that influence whether or not people
27 are able to fish, things like that, and there are a bunch of
28 different techniques that we can use, and windshield surveys are
29 probably the most common ones, and, in fact, at the shrimp workshop
30 last week, one of the shrimpers said that he had been asked, by
31 somebody at NOAA, to actually do a windshield survey of the
32 community he was living in, but these are just, you know, driving
33 around and getting a feel of the lay of the land, of where things
34 are, marinas and other fish landing centers and things like that,
35 and you can do some of them virtually today, with mapping
36 technologies that they have, and satellite technologies, and so
37 it's not necessary to actually go to those places.

38
39 I've been doing that in the Gulf with the shrimp fleet, and trying
40 to count shrimp vessels from a satellite over Bayou la Batre is
41 quite a challenge, but, anyway, there's also these cultural mapping
42 protocols, which are just brief, single-page forms that collect
43 information about fishing-related businesses, locations that allow
44 -- That are related to fishing, and, when you're doing these
45 cultural mapping protocols, it kind of gives you a way of
46 introducing your study, the study that you're going to do, to the
47 community.

48

1 When I did my IFQ study, for example, I went around and did a lot
2 of these protocols, but I also just told people that I would be
3 back talking to them about the IFQ things, and so I kind of
4 introduced them to what I was doing. Social scientists have used
5 a lot of inventories and checklists, usually, to assess fishing-
6 engaged and fishing-dependent communities, and I have one
7 publication that I included with this.

8
9 Again, these kinds of methods -- They are very quick, and kind of
10 easy to do, but they can help you in developing survey instruments,
11 interview protocols, help you in sampling, figuring out where to
12 find people, where to intercept fishermen, and things like that,
13 and they could also supplement existing datasets, such as the
14 census.

15
16 Now, most of us, when we think about social science data or
17 methods, I think we tend to think of surveys and focus groups, and
18 those are perfectly fine. They are used all the time, and we have
19 a bunch of examples of them here, and we see them all the time
20 here, and I just want to emphasize that surveys really need to be
21 constructed thoughtfully. It's often a good idea to interview
22 people ahead of time, when you're conducting the theory, to see
23 how they phrase things, how they consider things, the kinds of
24 things they think are important, and, also, it's important to pre-
25 test surveys and to make sure that they're distributed, you know,
26 according to a pretty representative sampling scheme, which is
27 often very difficult among certain populations.

28
29 Focus groups are also a very good way to get a lot of information
30 quickly, but they need to be kept small. I would say -- You know,
31 I'm doing one next week, I think, or the week after next, in North
32 Carolina, and I've told them no more than eight to twelve people,
33 and we also have to be careful about class and gender issues when
34 we put together a focus group, because you can have one person who
35 kind of dominates the conversation, and they will marginalize kind
36 of the minority view, and so constructing a focus group takes a
37 little thought as well.

38
39 My favorite method, overall, is just in-person, open-ended
40 interviews, because they tend to yield wide-ranging and helpful
41 information, and people will often introduce issues that you
42 haven't really even thought of, but that influence fishing
43 behaviors.

44
45 Here is just a few of the less-conventional methods that I'm going
46 to talk about. Social network elicitation, a lot of people use
47 it, actually, and it's not that odd. Photo voice is when you hand
48 out cameras to fishermen and seafood dealers or others in the

1 fishing community and ask them to take photos of specific
2 activities that they are important, but you can narrow that by
3 saying, you know, we would like photos of discards, or we would
4 like photos of bycatch, or we would like photos of different
5 vessels on the water, things like that.

6
7 Then you can interview -- Once you get the photographs back, you
8 can interview them about what they've taken pictures of, and that
9 helps them think about, you know, different issues.

10
11 Also, cultural consensus analysis is developing agree-disagree
12 statements from open-ended interviews or written sources to add to
13 surveys. For example, you could ask a bunch of red snapper
14 fishermen, you know, do you agree or disagree with the statement
15 that red snapper have migrated east in the Gulf of Mexico over the
16 past ten years, or something like that, and then reconstructing
17 cultural biographies and the social lives of things, and this is
18 kind of understanding the history of biology of things, in terms
19 of human interactions with those things, and those things can
20 include habitats, fish populations, fishing ports, whatever you
21 want to focus on. I also am going to talk a little bit about what
22 I call livelihood constellations after this, which I will include
23 there.

24
25 This is just comparing a couple of networks that we elicited in
26 North Carolina, an Outer Banks network, and I think this is like
27 Hatteras Village, and an Inner Banks, network, in a place like
28 Engelhard or Columbia, inland communities, and just you can see
29 that they're slightly different, and one has a lot more people in
30 it, and it's denser, and the other is kind of a looser network,
31 the Inner Banks network.

32
33 The Outer Banks network is, again, far denser than the Inner Banks
34 one, and so that increases the sources of information and social
35 positions that you have for things like advocacy or action or
36 getting information about fishing behaviors, and, with the Inner
37 Banks network, one dealer was kind of at the core of that entire
38 network, and so he had a lot of control over the flow of information
39 and stuff, and that's good to know when you're trying to get
40 information out there, is who to go to in the community to
41 disseminate that information.

42
43 The other thing about eliciting social networks is you can also -
44 - You can often get an appreciation of who the formal leaders are,
45 like commissioners and mayors and advisory service agents, versus
46 those that other people might rely on for leadership when it comes
47 to matters that are important to fishing communities and fishing
48 families, and sometimes those are different people, and so you

1 might have some people that are highly centrally placed in these
2 networks, but that are not considered formal leaders, and they
3 don't occupy positions of formal leadership in the community, but,
4 nevertheless, they are very influential in these networks.

5
6 We were actually looking for how people got their information about
7 regulations and how they responded to those regulations and how
8 they discussed those regulations, and so we were interested, in
9 this particular study, of kind of the flow of information through
10 the networks, but you can focus on anything, and so, a lot of
11 times, this network information will essentially focus in on the
12 people that are considered the best fishermen for having
13 traditional local ecological knowledge about different species,
14 right, and so it's a good way to focus-in on those people that
15 other fishermen think are really reliable sources of information.

16
17 This is just simplifying those networks, because, a lot of times,
18 again, the networks are often quite busy, and so you simplify it.
19 In this particular case, that star up in the far-right, the highest
20 far-right side, the biggest star there, would be a person who would
21 probably be the one you would want to talk to if you wanted to get
22 information about -- From a variety of different fishermen and
23 organizations, because that person is connected pretty much to a
24 whole bunch of different fishing organizations and fishermen,
25 commercial fishermen.

26
27 Photo voice, again, it's just a kind of easy way to get information
28 about what's going on on the water, you know, and so, in this
29 particular case, I think we were getting information on labor
30 constraints in the industry, you know, what kind of problems they
31 were having, and so we had them taking pictures of people working
32 in the industry and people who were -- Then places that they were
33 working, in the processing houses and stuff like that, and this
34 gave us an idea of where the bottlenecks were in the labor supply.

35
36 You know, I've been interested in migrant labor in fisheries for
37 some time, and so this was part of a project about that, but,
38 again, these visual cues -- You know, it gets people talking about
39 different things in fishing, and so it's a good way to get them
40 discussing things that are going on in the fishery.

41
42 Cultural consensus analysis is based on linguistics theory, and it
43 assesses consensus on specific issues, and so it's usually a narrow
44 issue, and like we would say, you know, what's the status of the
45 red snapper stock, and you would essentially zero-in on red snapper
46 fishermen to get that specific information, but cultural consensus
47 analysis assumes that, just as you only need a few speakers of the
48 language to learn that language, you only need a few people who

1 represent the view of many to understand the beliefs of a certain
2 group of people, but you have to be careful about how you identify
3 those people, and so you can have, you know, snapper grouper
4 fishermen, to get them talking about the status of red snapper,
5 but, essentially, you need people who have a lot of experience
6 with, you know, snapper grouper fishing.

7
8 The technique involves identifying the group, you know, deciding
9 who you want to focus on, and conducting open-ended interviews
10 with a few members of that group, to obtain these agree-disagree
11 statements, and so these statements are pulled pretty much directly
12 from the interviews, and then you -- You know, you just phrase
13 them as agree or disagree, and you have about half of them that
14 agree and half of them disagree, and usually about thirty or forty
15 statements.

16
17 Then you administer that test, those statements, to about twenty
18 to twenty-five people and it determines the consensus within that
19 group about this particular subject, whether it's red snapper or
20 whatever, and it's not necessarily the best available science, but
21 it's just what the group believes, right, but you know then what
22 the group is thinking about in this -- What the group is thinking
23 about gag, for example, and so, if I was going to do this about
24 gag, for example, I would go to that Clay that talked yesterday,
25 and start with him, and then work out from him to get people up in
26 the Big Bend region who really knew about gag fishing.

27
28 Cultural biographies is a little more -- It's very qualitative,
29 and, again, they're biographies of specific things, from an
30 anthropocentric perspective, that locate the ways that these
31 things influence one another, and so how humans influence habitats,
32 how humans influence different species and things like that.

33
34 In the article that I included in the package here, two of my
35 colleagues in Puerto Rico and myself, we traced the cultural
36 biographies of spotted goatfish and cero and king mackerel in the
37 Caribbean, and all three of these species were heavily targeted by
38 Puerto Rican fishermen, but they really constituted small portions
39 of the official landings, and, in some cases, the fishermen said
40 these are our most important species, but then they were only about
41 3 percent of the landings, and so I wondered about that, but the
42 reason was that Puerto Rican fishermen valued the quality of their
43 catch over the quantity, and these species were in high demand,
44 because they were, first of all, kept for family consumption, and,
45 second of all, they were given as gifts to members of their social
46 network, or, third, they were sold as specialty products in kind
47 of alternative markets, usually directly from their vessels or
48 from their houses or used in fishing association restaurants or

1 through networks, but, also, these particular fish were really big
2 fish during Lent, which is an important holiday in Puerto Rico, a
3 holiday where you're supposed to eat a lot of fish.

4
5 Then the last kind of less-conventional method is just analyzing
6 the livelihood constellations, and I've just started doing this.
7 I've done a little bit with fishing families, because I've realized
8 that a lot of fishing families engage in multiple livelihoods,
9 right, and so they have -- In a household, they will have one
10 person who fishes, but he might also do something else, like run
11 a car lot, you know, or do construction on the side, or work on an
12 oil rig, something like that, and then other people in his
13 household might do other things, but understanding how these
14 different livelihoods influence one another can help predict
15 movement in and out of fisheries, you know, and impacts on
16 communities and stuff like that, and impacts that specific
17 regulations might have on fishing communities, you know, and how
18 much a community might be able to absorb the shock of a reduction
19 in fishing activity.

20
21 Now, this figure here is actually from peasant families that I was
22 working with in Guatemala, and it just shows two households, or
23 it's actually five households that are in two different compounds
24 that are connected by this woman named Olivia. It's her household
25 of procreation, and that is the household that she has her children
26 in, and also her household of orientation, on the right, which is
27 the household that she was born into, but you can see that -- I
28 mean, I know that this slide is kind of busy, but you can see that
29 they have a lot of different activities that they engage in, and
30 so they have export agriculture, and they have these little gardens
31 and livestock pens kind of scattered around, and they have a little
32 tiny trucking business, where they actually truck produce around
33 Central America.

34
35 They have a processing center, where they can process anything
36 from Walmart plastics to heads of cabbage in that processing
37 center, and just whatever they need to -- Whatever they can get a
38 contract for.

39
40 They had a mushroom cave that they developed with some technical
41 assistance from the Government of Spain, and they have two
42 greenhouses that they made after these guys who were working in
43 Canada came back, and they were guest workers in Canada, and they
44 came back and they established these greenhouses based on the
45 greenhouses that they saw in Canada. They were working in them in
46 Canada.

47
48 They just have a wide variety of these different livelihoods, you

1 know, and so they can expand and contract these based on different
2 economic situations, but you see this among fishermen, especially
3 when, you know, certain fisheries close, and they have to move on,
4 and you see it particularly among people who engage in seasonal
5 livelihoods, and so I'm getting into this kind of study as well.

6
7 Now, I just want to -- The last thing I really want to talk about
8 this this quantifying qualitative data, and a lot of the data that
9 social scientists collect is qualitative in nature, and we have
10 these big concepts, you know, like dependence on fisheries,
11 gentrification, precariousness, and, you know, these are all kind
12 of qualitative ideas, and we can describe these variables, but we
13 also need to track them sometimes in relation to explicitly-
14 quantitative variables, like landings, allocations, distance from
15 centers of power, and so forth.

16
17 We do this a lot by, like biologists do, by creating indices, and
18 so I just wanted to do a couple of indices that I have developed.
19 We have developed an indices of dependence on fisheries in Puerto
20 Rico, using eight items, and these were -- The first one was it
21 was a place-based fishing community, and that is if it had fishing
22 association associated with it, and people lived right around the
23 association, we gave it a score of two.

24
25 If it was just a network-based community, and that is they were
26 dispersed all over the community, but they came together to fish,
27 then we gave it a score of one. The ratio of part-time to full-
28 time, or full-time to part-time fishermen, we had a formula for
29 figuring out how many points to assign it there, and the point
30 scale ended up being from one to I think twenty or thirty or
31 something like that, with thirty being a very, very highly-
32 dependent fishing community.

33
34 We gave them points for number of ties to tourism, for involvement
35 in coastal conflicts, you know, if they were very directly involved
36 in a coastal conflict to save the mangrove forest, for example,
37 and we gave them like three points for that. Number of ties to
38 the state, you know, because states are a big -- The government is
39 a big provider of fishing association infrastructure in Puerto
40 Rico, and so that was important.

41
42 Fishing infrastructure, if they had association facilities, like
43 lockers, piers, and some associations have restaurants and seafood
44 markets. Ceremonial activity, you know, some of the associations
45 would have a little chapel, where they hosted the Virgin of Carmen,
46 who is the patron saint of Puerto Rican fishing, in the Spanish-
47 speaking world, and some people -- You know, they have statues and
48 stuff like that, and then rank in the landings data, and we

1 included landings data, but we changed the -- We gave them a score
2 of one to five, based on this environmental index formula that we
3 found, because we didn't want landings data to kind of overwhelm
4 the whole index, but, again, that was just -- It was all based on
5 ethnographic work that we had done beforehand, and we created this
6 map of where dependent communities were all around the islands of
7 Puerto Rico, and so that included Vieques and Culebra as well as
8 the main island.

9

10 For this other study that I did with Mike Jepson and Brent Stoffel,
11 we published this article that I included in *Marine Fisheries*
12 *Review*, but we compared twenty Atlantic ports, from Wanchese, North
13 Carolina to Palm Beach Shores, Florida for their dependence on
14 fisheries, but we also developed indices for things like
15 vulnerability on -- We also developed indices for vulnerability,
16 or the ability to withstand shocks or closure or limited entry or
17 things like that, anything that might disrupt fishing
18 vulnerability/resilience, right, and sustainability, the ability
19 to maintain and reproduce fishing practices over time, and
20 gentrification is still a huge thing up and down the east coast of
21 the United States for fishing communities, and we developed indices
22 for this, and we ranked the ports, but one of the things we wanted
23 to do, specifically because Mike Jepson used a lot of census data,
24 and so we wanted to compare our rankings of these communities along
25 these lines with the rankings that we could develop with the census
26 data.

27

28 What we found was that the ethnographic data were much more
29 reliable in these large metropolitan areas, because the census
30 data there was way too complex, and it would just overwhelm all
31 the fishing-related data, but the census data were pretty useful
32 when it came to smaller rural ports, a place like Wanchese, North
33 Carolina, which is a very small community.

34

35 We do modeling, and, you know, we do a lot of ecosystem modeling,
36 and that includes human, and we use Ecopath and things like that,
37 but models in the social sciences are about as ubiquitous as
38 theories in the social sciences, which are very common, and they're
39 usually related, models and theories, right, and I have noticed
40 some current modeling techniques, and Steven here can tell you
41 much more about agent-based modeling than I can, but, related to
42 fisheries, I've done agent-based modeling related to migration
43 behavior, but mostly in Africa, and not really in fishing
44 communities, but there are really too many models to, you know,
45 cover in this presentation.

46

47 One of the key -- You know, like ecosystem-based management, the
48 key aspect of our most helpful social scientific models are, again,

1 those that really try and put human behavior in these wider social
2 and cultural context, and just like ecologists place fish and
3 trophic exchanges and harmful algal blooms and things like that
4 into their wider ecosystem, and so I think that's the, you know,
5 take-away approach that I would like to see done more, and I'm
6 really happy that, again, they included economic and social science
7 information in the data workshop last week with shrimp, and they're
8 now considering that for hogfish as well, and so I'm glad to see
9 this is heading in that direction, and so thank you. Any
10 questions?

11
12 **VICE CHAIRMAN BARBIERI:** Thank you so much, Dave. That's
13 fascinating stuff that I would say most of us were not really
14 familiar with, right, and don't use very often, and so I think
15 that this was not just very interesting, but helpful, and not to
16 all of you, because I know that we have some social scientists
17 usually engaged with us, but we have a lot of people who don't,
18 right, delve into this field, and so having this overview is really
19 helpful. With that, let me open it up for questions for Dave.
20 Trevor.

21
22 **MR. MONCRIEF:** Just a general comment, and I have always been
23 fairly interested in this stuff, and I think, too often, and more
24 often than not, and I have a pretty bad problem with it too, the
25 lens in which you kind of view the entire management process and
26 everything else, you don't look beyond your observation or the
27 observation of your colleagues, right, and so like a decade or two
28 decades pass, and, oftentimes, we don't look back in time, and so
29 the cultural biography aspect of it kind of caught my eye.

30
31 You think about things like the county almanac, right, and writings
32 about conservation and descriptions of communities and
33 interactions with ecosystems and stuff like that, and, you know,
34 there's a similar -- I think he used -- Rather than calling it
35 nefarious or anything else, he essentially called the quantitative
36 models cold-potato mathematics, which I always thought was -- I
37 won't get into it in this group, and then anything about things
38 that describe fisheries specifically, right, and so like *All the*
39 *Men Singing* I think is the menhaden one, that kind of goes over
40 the entire history of the fishery, where it developed, how it
41 started as food fish, and how it transitioned to where it is now.

42
43 We just don't really have that for everything, right, and you've
44 got old-timers that have been around, that participated in the
45 fishery, but you can't -- You can only get it if you talk to them,
46 and so the whole rambling of conversation has essentially led to
47 like the only place I know where we can gather this information,
48 in a relatively scheduled way, is within the taskforce associated

1 with species profiles within the Gulf States Marine Fisheries
2 Commission.

3
4 There are times, and like the Atlantic croaker profile, where,
5 essentially, they went back to Mr. Mavar, the Mavar family back in
6 Mississippi, to talk about the pet food industry, the history of
7 it and how it developed, and I don't know, and is there any other
8 -- Is there any other pathway, or any other funding source or
9 effort, that you know of, that kind of is focused on gathering
10 historical perspectives of fisheries, or the cultural biography
11 aspects of all these different fisheries?

12
13 **DR. GRIFFITH:** Well, I wouldn't say about all these different
14 fisheries, but, when we go into the field, for example, I mean,
15 going through local libraries and local bookstores and stuff like
16 that for all kinds of -- Sometimes extremely obscure texts, you
17 know, can be helpful, and I know that -- You know, then the
18 Department of Interior has all kinds of -- I mean, if you go to
19 the National Archives, which a lot of the National Archives and
20 the Library of Congress information is online too now, and so much
21 of it has been digitized, and you can find that kind of information
22 for specific ports, and specific species of fish, and stuff like
23 that, you know, online.

24
25 There's this huge volume of -- Goode, I think his name is, that
26 did this huge study back in the turn of the century, the turn of
27 the 20th century, about fisheries all throughout the United States,
28 and you can download that. You know, you can get it from the
29 Library of Congress, but, to get like -- To put together a cultural
30 biography, it is a time-consuming thing, and, actually, you know,
31 they kind of want me to do something like that for the shrimp, for
32 that period of like the mid-1990s to about 2008, where there was
33 this huge consolidation in the industry, and I've been working on
34 that, but it is very difficult to find information, you know, about
35 that.

36
37 Luckily, some of it comes from the councils, right, and the
38 councils have a pretty big archive of information, but, yes, it is
39 hard, but it's not impossible.

40
41 **VICE CHAIRMAN BARBIERI:** Thank you, Dave. We have another question
42 here from Dan Petrolia.

43
44 **DR. PETROLIA:** Thank you, Mr. Chair, and thank you, David, for
45 that presentation. I guess I have more of a rubber-meets-the-road
46 kind of a question here, and so, you know, given your experience
47 observing the SSC process over time, a lot longer than I have,
48 what would you say might be the top one or two places where

1 information like this can directly inform the SSC process? Thank
2 you.

3
4 **DR. GRIFFITH:** I'm sorry, and where?

5
6 **DR. PETROLIA:** So, I mean, this is useful information, but, as I
7 sit through the typical deliberations that we have on the SSC,
8 it's hard to see where this information could directly come into
9 play, and so I'm asking for your opinion, and where would
10 information like this be able to directly inform the process?

11
12 **DR. GRIFFITH:** I would say in terms of the interviews with
13 fishermen, like when fishermen come in here and talk to us, their
14 input, as well as Ryan goes out, I know, and talks to fishermen,
15 and, I mean, the council staff go out, but I think, wherever those
16 fishermen are talking about things like effort, the reasons that
17 they cannot fish, or do not fish, or shift among fisheries, and,
18 whenever the fishermen are talking about their behavior, and why
19 they do what they do, that seems, to me, that there is information
20 in there that could be directly relevant to stock assessments.

21
22 **DR. PETROLIA:** A follow-up?

23
24 **VICE CHAIRMAN BARBIERI:** Yes, please, Dan.

25
26 **DR. PETROLIA:** So, David, are you suggesting that we don't do
27 enough of that right now, and that there should be a more
28 systematic means of doing that?

29
30 **DR. GRIFFITH:** That would be nice, if there was a more systematic
31 way of doing it, and I would really appreciate that, and I would
32 -- I mean, I think there are a lot of social scientists that would
33 be willing to work on exactly that issue, of how to more
34 systematically collect and synthesize, you know, local knowledge
35 about fisheries in a timely fashion, right, and one of the problems
36 with a lot of ethnographic work is it takes a long time, but I
37 don't think it would be impossible to do that. Again, when I
38 talked about that cultural mapping protocol, that was one -- That
39 is one way to get a lot of information quickly.

40
41 **VICE CHAIRMAN BARBIERI:** I have Cindy and then Jack.

42
43 **DR. GRACE-MCCASKEY:** You know, one of things -- I am really glad
44 that you asked that, Dan, and one of the things that I have noticed
45 -- You know, I did a lot of work, for my dissertation and grad
46 school, analyzing the council process, the SSC process, the broader
47 council process, and looking at how social science data is
48 incorporated, things like local knowledge and fishermen input,

1 that kind of thing.

2
3 In the Caribbean, and I worked for NOAA out in the Pacific, and,
4 you know, one of the things that I consistently see is that the
5 social science data is not something that is consistently
6 collected, and it's not -- You know, we don't monitor communities
7 in the same way that we monitor fish, right, and populations and
8 conduct regular stock assessments, and so, when an issue comes up,
9 and it's like, oh, well, we wonder what the fishermen think about
10 that, well, it's too late at that point to put a study in, or
11 design a study, collect the data, and analyze it.

12
13 You know, you're two years down the road, and that's no longer
14 helpful, or it's just not realistic, and so, yes, I mean, I think
15 one of the things is we do need to have more consistent collection
16 of this type of data and more money put toward it.

17
18 I mean, when you look at the inequity, in terms of funding that's
19 put towards social science data collection, versus natural and
20 physical science data collection, when it comes to management,
21 it's just -- It's incomparable, and so thanks.

22
23 **VICE CHAIRMAN BARBIERI:** Great points. Thank you, Cindy. Jack.

24
25 **DR. ISAACS:** I really enjoyed Dr. Griffith's presentation. It
26 showed so much that I learned from, and, now, economics, of course,
27 is one that uses our models and theories and the like, and I think
28 it tends to be pretty powerful, and it's always good for economists
29 to realize that we're not the only people in the room, which
30 sometimes we have a tendency to believe that.

31
32 One thing I like is, in economics, we would think that fishermen
33 kind of go shopping for docks, so to speak, to try to go from dock
34 to dock to see which one is paying the higher price, and there
35 would be competition among the docks for anglers and for product,
36 but one thing that I have learned, and it kind of backs up a lot
37 of what David had to say here, is that there's more of a social
38 content, something going on there in the social world, and the
39 language that dealers use very often suggests that that process
40 that I talked about, the fishermen shopping for docks, doesn't go
41 as smoothly as we think it does, because you often hear dealers
42 refer to shrimpers as their shrimpers, or the fishermen as their
43 fishers, and those proprietary links are sometimes maintained by
44 something that kind of looks like sharecropping.

45
46 Dealers will lend the fuel to the fishers, and that kind of links
47 them into the dock, and I find that sort of thing fascinating, and
48 then those dealers, of course, are important conduits of

1 information, and they only -- They can be information brokers, and
2 they will let information out that they want the fishers to know,
3 and keep information back that they don't want them to know, and
4 I find that terribly fascinating, and this sort of stuff that he
5 talked about is very important.

6
7 I think, you know, when it comes to a lot of this social data, I
8 think we do have to remember that, okay, economics is only one
9 person at the party, but it's an important person there, and I
10 think, when we're gathering these data, we need more information
11 on input use and the cost of harvesting the fish, and we probably
12 only have to gather data on the three or four most important
13 resources, I would think, to gather the majority of their expenses,
14 but, at the end of the day, we have all these social networks going
15 on, and I can really appreciate this, that these people are in
16 this for a business.

17
18 When you're running a business, you have to earn profits. When
19 you earn profits, we have data on what revenue, to a certain
20 extent, when it comes to dockside landings. Stuff that we're
21 consistently missing and that we really need is the cost of the
22 inputs, so we can compare the cost of the inputs, the cost of
23 harvesting, to the revenue that comes with harvesting, and have
24 some depreciation for profit. When we're gathering all these very
25 worthy data, we do have to remember that probably the most
26 important stuff we can get is the cost of doing business, however
27 we can do that, and it's a hard thing to do.

28
29 **VICE CHAIRMAN BARBIERI:** Thank you, Jack, for that. I have Mike
30 Allen and then Luke Fairbanks and then Tom Frazer and then Will
31 Patterson. That's how interesting this was.

32
33 **DR. ALLEN:** David, thank you for that presentation, and I really
34 enjoyed it. You know, it seems like, when I think about how we
35 can use that information, this kind of information, on the SSC,
36 and we commonly get to a place where we consider some different
37 management actions on a fish stock, and we're always left with
38 this kind of black box of, well, what's going to be the response
39 to this for the recreational or the commercial fishery, right, and
40 what are going to be the response, and so I guess my question has
41 two parts.

42
43 One is, from these type of interviews, data synthesis,
44 vulnerability assessments that you've done, can you take that to
45 the next step of prediction about what actually happened, and then
46 the other thing that I've wondered about is are there examples
47 that we could lean on in other cases to maybe infer what people
48 are going to do in response, and so more natural experiments that

1 have happened, that we can use that information to say, well,
2 here's how people respond in a similar situation, in different
3 contexts, and it would be, I think, really useful to have that
4 synthesized somehow, so that we could lean on that a little bit,
5 because, a lot of times, we don't have the data at-hand for the
6 problem, and so your thoughts about, you know, predicting people's
7 responses to this kind of thing.

8
9 **DR. GRIFFITH:** Well, I do think it is possible to predict, you
10 know, with a certain amount of uncertainty, based on information
11 like their dependence on fisheries, or dependence on specific
12 stocks, you know, their vulnerability, where they're located and
13 stuff.

14
15 Again, the more you know about, you know, their involvement in
16 multiple occupations, multiple livelihoods, that can help you out
17 as well, but your point about what people have done in the past,
18 to me, is a very good one, because it's easy for -- In a lot of
19 cases, when we -- When we collect data from people, we'll say what
20 would you do under these conditions, and so people -- You ask
21 people hypothetical questions, and they're going to give you
22 hypothetical answers, right?

23
24 It's better, I think, personally, to see what people have done in
25 the past, and that's why, today, I was interested in this vermilion
26 snapper issue, because I thought, well, wait a second, they told
27 me that, if they were denied quota in the red snapper fishery, the
28 first thing they would do is go to vermilion snapper, and they
29 said all the fishermen would do that, right, and so that was a
30 hypothetical answer to that hypothetical situation. Well, it
31 didn't happen, and so what you have -- Personally, that's why I'm
32 interested more in historical analysis, to see what people have
33 done in the past, and that's a better predictor of what they're
34 going to do in the future.

35
36 **DR. ALLEN:** Excellent. Thank you.

37
38 **VICE CHAIRMAN BARBIERI:** I have Luke Fairbanks.

39
40 **DR. FAIRBANKS:** Thanks. Thank you for the presentation, Dr.
41 Griffith. You know, I think -- I won't repeat, I think, what some
42 of the other social scientists have already said, because I
43 generally would agree, you know, with some of the issues that were
44 brought up, and I guess I just, from my perspective, and, you know,
45 I've had the pleasure to sit on the Socioeconomic SSC for a couple
46 of years at this point, and, you know, I think that issue that was
47 brought up just kind of -- Not just thinking about systematic ways
48 of data collection, but systematic ways of incorporating it

1 meaningfully into this process.

2
3 You know, I think that really -- That's the question, and I don't
4 recall, in my tenure, and it's been short, but, you know, folks
5 like yourself have been here for a long time, but, you know, ever
6 discussing things like BSIA in relation to social science data,
7 and I know that's somewhat an artifact of what we're tasked to do,
8 and things like that, you know, often wouldn't qualify, or aren't
9 relevant, but the discussions are just very different.

10
11 I feel like I've heard this discussion, of how can we incorporate
12 social science, a few times, and it always garners a lot of
13 interest, and so, you know, I think it's good to keep it moving
14 forward and hopefully, you know, find ways to systematically
15 incorporate this sort of thing.

16
17 You know, the other just quick thing I will mention is the issue
18 of the rapid assessment is a big one, because we are often
19 reactive, like Cindy said, with social science, and that's plainly
20 obvious in terms of the funding mechanisms. You know, if you look
21 at something like Saltonstall-Kennedy, or other federal funding
22 programs, they're typically reacting to immediate needs, or, you
23 know, maybe there is some scoping, but it's typically, you know,
24 short-term things that we think we're going to need very soon, and
25 it's not -- You know, it's not developing some sort of major long-
26 term program, and those programs that do exist are typically
27 supported by other means, and so they're not going to always be
28 consistent across regions or fisheries or communities.

29
30 You know, I will say that one opportunity, in my mind, has kind of
31 come out of COVID, and there's been a lot of methodological
32 innovation, not just in fisheries and marine social sciences, but
33 in a lot of related fields, where I think there are opportunities
34 to think about how can we get social science data that is valid
35 and rapid and meaningful into these processes on a short timeline,
36 you know, pending funding availability, and I think there's a lot
37 of smart people out there that are showing that that can be done,
38 if the tools and resources are handed over to them.

39
40 You know, I know we're not the ones to make those decisions, but
41 I think it should be something that's always on people's minds,
42 because these types of questions often come up, but, you know,
43 eventually they get bypassed, and it's hard to, you know, take
44 what we hear from fishermen, or other stakeholders that come to
45 public comment, and really, you know, consider it in the same way
46 that we do something like you know, a stock assessment, for
47 instance.

48

1 You know, finding ways to do that, I think it's a critical need,
2 and there's been a lot of steps forward with it, but, you know,
3 there's always more that can be done, and so I think it's
4 important, you know, and I appreciate this presentation to bring
5 to the table some of the methods that people might want to think
6 about.

7
8 I have more to say, but I will leave it at that, and I don't want
9 to turn this into sort of a social science grievance session, with
10 myself on a soapbox, and so I will leave it at that, but, yes, I
11 appreciate this discussion. Thanks.

12
13 **VICE CHAIRMAN BARBIERI:** Thank you for your comments, Luke, and we
14 did not hear a social science grievance, and you've just brought
15 up some good points that have been brought up by a lot of the folks
16 in this field, right, that more of this needs to be done and
17 incorporated into what we do. Tom Frazer.

18
19 **DR. FRAZER:** Thanks, David. In your slideshow, or presentation,
20 you had one of the slides that had an index, right, and it's trying
21 to characterize the dependence on fisheries, and there were eight
22 items in there, and so, typically -- I mean, we have a lot of
23 indices, clearly, right, and we don't have many that are quite so
24 complex as this, and I guess I was curious, when I was reading
25 through the boxes, and how do you establish a protocol to weight
26 those various things?

27
28 **DR. GRIFFITH:** In this particular case, I have to confess that
29 this was based on long-term field research that we had already
30 done in Puerto Rico, and we have visited every fishing association
31 in Puerto Rico, and interviewed fishermen all around the island,
32 and this was a pretty heavily-funded study by the Caribbean
33 Fisheries Initiative of NOAA, right, and so we had a lot of
34 information.

35
36 What we did is we -- The way we weighted these things was really
37 based on our own, you know, subjective understanding of what was
38 important to fishermen in the Puerto Rican fisheries, and so it
39 was based on a subjective understanding, but it was the whole team,
40 you know, getting together and -- Including all the research
41 assistants that we used, as well as the three top researchers,
42 myself, and Carlos Garcia-Quijano and Manual Valdes-Pizzini, and
43 we were the three PIs on the project.

44
45 We developed this index, but, again, it was based on I think seven
46 months of field research in Puerto Rico, and visiting every fishing
47 association on the island, and so it wasn't rapid, and let me put
48 it that way.

1
2 **DR. FRAZER:** That's okay, and there's like a couple of parts to my
3 questions here, and so then, knowing that though, and so now you've
4 got this index of dependence, and so what do you tie that to? Why
5 was that useful?
6

7 **DR. GRIFFITH:** Well, at the time, what they wanted was information
8 on planned and current MPAs in the Caribbean, where they were
9 planning to put them, how big they would be, what kind of species
10 were involved and things like that, and so, consequently, they
11 were concerned about where the impact of these MPAs was going to
12 be most felt, right, by the fishing communities, and also most
13 contested, right, because, in Puerto Rico, they have very low rates
14 of -- A lot of times, they'll have very low rates of political
15 activism, but, when it touches a nerve, you can really get a lot
16 of very, very sometimes violent political activity in these
17 communities.
18

19 When you want to put in something like a marine sanctuary, or a
20 marine protected area, you know, if you're going to put in
21 Parguera, or something like that, where there's a lot of fishermen,
22 and it's a very important area, and Cabo Rojo is right nearby,
23 then you're going to have a lot of pushback and stuff, and so
24 that's the kind of thing they were interested in, and they wanted
25 to -- They were also just interested in, in these fishing-dependent
26 communities, what kinds of problems were they experiencing related
27 to their fishing dependence, right, and so what -- So they were
28 very much interested in things like where do part-time fishermen
29 fit into things, and a variety of -- Licensing issues, limits,
30 that kind of thing, but mostly it was the MPAs.
31

32 **DR. FRAZER:** I get that, and so I was trying to bring it back to
33 the question of, you know, like how do you insert that type of
34 information into like an SSC discussion, right, or a council
35 decision-making process, and so, you know, to me -- Let's say
36 here's an example, and it's analogous, maybe, to an MPA, whether
37 you put one in or not, right, because there's a consequence on the
38 community, but, in this particular case, let's say we're allocating
39 fish to one sector or another, where we're minimizing the number
40 of days, right, by that allocation decision, and so, instead of
41 having 500 people running around in the community and buying gas
42 and having festivals, because that's what the community is like,
43 they've only got three days, and so they don't ever have the
44 festivals anymore, et cetera, et cetera.
45

46 People are angry, and they're protesting now, but how do you -- So
47 that should become part of your decision-making, right, when you're
48 making a decision like that, but the problem is, you know, I can

1 quantify, or I can characterize, you know, what the economic impact
2 might be on the commercial sector, or the for-hire sector, you
3 know, and all of the kind of loose connections in the recreational
4 sector, as far as housing and, you know, gas and boats and all
5 that kind of stuff.

6
7 What I can't quantify, or can't characterize, is social unrest
8 that I might have caused, right, and the cost that's associated
9 with that, you know, or the fact that I disrupted a community's
10 culture, or character, right, which I may never get back, and so
11 the problem I have in all of this is, even if I added that to the
12 formula, as part of that allocation decision, and in order to
13 quantify it, and, even if I didn't have a way to quantify it, I
14 don't know how to weight it, right, in part of my decision.

15
16 When I'm talking to the folks that are on the social science side
17 of things, I understand all of the ideas, and, you know, kind of
18 these intangible things, and, conceptually, I get it. What I can't
19 -- I personally have a really hard time trying to justify how much
20 weight I give it in a decision, right, and so how do we get there?

21
22 **DR. GRIFFITH:** Well, again, that is a very difficult issue,
23 because, again, it's trying to predict how a community is going to
24 respond. We did -- I mean, of course, we shared all of this
25 information with the Caribbean Fisheries Management Council,
26 right, and they were able to use some of -- I mean, some of the
27 stuff we collected was very simple, and it led to very simple
28 solutions, like renaming a certain kind of part-time fishing
29 license that they were giving out, and it turned out the fishermen
30 just hated the name, because it seemed to make it out like they
31 were amateur fishermen, and, in fact, I think that's what the name
32 was, is amateur fisherman.

33
34 They didn't like that, and so the council just changed the name of
35 the license, or the DNR did, but, anyway, there were small things
36 like that, but, in terms of figuring out -- Again, predicting how
37 a community is going to respond, and how, you know, widespread
38 that response could become, because one of the things that
39 fishermen do in Puerto Rico is they -- When they respond to a
40 crisis, they tend to associate their crisis with the crisis of the
41 working class in Puerto Rico, and they can marshal quite a bit of
42 local support, I mean island-wide support, for their particular
43 issue, whether it's, you know, the cutting away of mangroves
44 because a resort wants to put in a path for their hotel or
45 something, or, you know, putting in a marine protected area.

46
47 They can marshal quite a bit of support to stop that and to, you
48 know, protest that, and so I think the council having that kind of

1 information could, you know, advise them as to whether or not it
2 was a good idea to put that MPA in just a blanket fashion or to
3 somehow involve the community in it and say, you know, how would
4 you like to implement this in a way that is -- You know, to bring
5 them in.

6
7 The other part of that study, by the way, and developing an index
8 of dependence was only one part of the study. You know, the other
9 things that we were interested in was finding out how to get
10 communities onboard, and so we gave a series of workshops to a
11 whole bunch of key fishing communities throughout the islands of
12 Puerto Rico, and so we also, you know, told them all about the
13 whole process and stuff like that, which a lot of them knew, of
14 course, but I don't really have a simple answer to your question.
15 I think, on a case-by-case basis, we could figure out how to weight
16 a specific issue, but I wouldn't -- I wouldn't venture to say how
17 to do it overall, you know, in general.

18
19 **VICE CHAIRMAN BARBIERI:** Cindy, I have two other people in the
20 queue, but do you have a comment that's specific to that point?
21 Yes, please.

22
23 **DR. GRACE-MCCASKEY:** Thank you. Well, first of all, that is like
24 the biggest issue, I think, with incorporating some of these data
25 into this process. I teach an interdisciplinary social science
26 course for folks who are typically natural scientists, and,
27 honestly, it goes -- I mean, Western science, the approaches, it's
28 just what is embedded here in the U.S. in fisheries management,
29 and, until some of that starts to break down, which I don't think
30 ever will happen, and I don't know that there's an easy way to do
31 that, but, again, I could go on forever with that, and, if anybody
32 wants to talk about that, let me know.

33
34 What I was going to say, in response to your question about
35 indices, is there are ways, you know, robust, rigorous social
36 methodology, for developing indices out of surveys and things like
37 that, and so that's not to say that it doesn't still take time, of
38 course, to make sure you're getting the proper sample, and you're
39 getting a representative sample, valid responses and that kind of
40 thing, but there is a process to actually develop, you know, those
41 indices in a quantitative way. Thank you.

42
43 **VICE CHAIRMAN BARBIERI:** Thank you, Cindy. I will go to Will
44 Patterson now.

45
46 **DR. PATTERSON:** I yield, Luiz. Thanks.

47
48 **VICE CHAIRMAN BARBIERI:** Thank you, Will. Harry Blanchet.

1
2 **MR. BLANCHET:** I also yield.

3
4 **VICE CHAIRMAN BARBIERI:** Okay. Well, any other questions or
5 comments?

6
7 **DR. KILBORN:** I just wanted to make one comment, that these are
8 the same problems with getting environmental indices into the stock
9 assessment process, and so I think these are analogous issues, and
10 we've made a little bit of headway, with trying to get some
11 development on an ecosystem plan for fisheries, and maybe we can,
12 you know, eventually do something like this along those lines.

13
14 That being said, in the FEP process, we're also trying to
15 incorporate some of these sociological aspects as well, and so
16 there's, you know, a natural marriage that could take place there,
17 also.

18
19 **VICE CHAIRMAN BARBIERI:** Right, and I agree. Thank you for that,
20 Josh, because I agree, and I don't know how much all of you, and
21 the other social scientists online, are involved in the FEP process
22 for the council, but I think that, you know, that could be a good
23 way to get engaged, right, and be a little more directly involved
24 in providing some -- At least some guidance, right, on things to
25 be more inclusive of this type of data and analysis in the things
26 that we do here, and I think that would be super helpful.

27
28 We think of fisheries as, you know, socioecological systems, right,
29 that are driven by the natural resource, and fishers as well, and
30 that has all sorts of social connections, right, that you know
31 better than I do, and so ignoring those factors now generates so
32 much more uncertainty, right, that we actually recognize, and
33 having more of this dimension included into what we do is super
34 helpful, and you can see the level of interest, and you just like
35 you said, hey, I just put together a very basic presentation, but
36 folks are all over it, because it's really fascinating, and so we
37 want to thank you, Dave, for putting this together and addressing
38 the questions and generating this much great discussion. It's
39 really, really cool, and we thank you. Luke Fairbanks.

40
41 **DR. FAIRBANKS:** Thanks, and I just had one quick comment about the
42 issue of prioritizing, or evaluating, something like an index or
43 other social data, and, you know, I think another thing to consider
44 is that I think social scientists -- Kind of out of necessity, we
45 often don't delve into theory, the social science theories that
46 underpin a lot of social science work, and I understand why that's
47 the case, but kind of placing the social science data within the
48 theoretical framework in which it was collected, or created, is a

1 way to elucidate the prioritization of the information contained
2 in that data, because different theories sort of necessitate
3 particular ways of thinking about what social data mean, what is
4 more or less important.

5
6 You know, some of that is grounded in some normative decision-
7 making, which I know can be a little scary, for lack of a better
8 term, but the fact of the matter is that much of what we do,
9 whether it's stock assessment work, ecological work, or the social
10 science work, is ultimately, at some point down the line, grounded
11 in those types of decisions.

12
13 You know, I think that, when social data are brought to the
14 discussion, or, you know, kind of brought to the party, for
15 thinking about fisheries management, I think, you know, we
16 shouldn't shy away from the theory, even if it is complicated or
17 it appears almost a la carte, because different theories are
18 typically deployed, or employed, dependent on the case, or the
19 researcher that's using it, but those theories that underpin the
20 work really do, in my opinion, help drive what is the most
21 meaningful and applicable results from the data, and that can help
22 you do things like prioritize what findings matter more for a
23 particular, you know, stock assessment or fisheries management
24 decision.

25
26 It's a little tricky, but I think, you know, if there's a
27 commitment to it, it can certainly be done by any social scientist
28 during that sort of work. Thanks.

29
30 **VICE CHAIRMAN BARBIERI:** No, thank you, Luke, and, by the way, I'm
31 going to take this opportunity, very briefly, just to thank all
32 the social scientists that participate in our SSC process, and I
33 know that sometimes we get so focused on just the biological and
34 ecological issues that you seem to be sort of forgotten, or
35 unappreciated, but make no mistake, and we really appreciate all
36 of you being part of it, and most of us are not really very
37 knowledgeable about those things, and having your expertise on
38 hand here, you know, to alert us and to bring up like some of the
39 issues that we may be inadvertently ignoring, right, because we
40 just don't know that those are important, is really, really
41 valuable, and so thank you for being part of the SSC, and please
42 continue to stay with the committee, if you can, because your input
43 is very, very valuable.

44
45 With that, I guess, to close Item Number XII, Agenda Item XII,
46 and, again, thank you, Dave, for the great presentation and great
47 discussion, and we will move on to Agenda Item XIII, which should
48 be a very, very fast review, and, I mean, this is going to be like

1 zoom, right, and it's going to be just a review of the lane snapper
2 updated catch analysis, right, by Dr. Francesca Forrestal. Mr.
3 Rindone, if you can read the scope of work, I think we are ready
4 to go.

5
6 **REVIEW: LANE SNAPPER UPDATED CATCH ANALYSIS**
7

8 **MR. RINDONE:** Francesca counted them, and she's going to tell you
9 about it.

10
11 **VICE CHAIRMAN BARBIERI:** Done.
12

13 **MR. RINDONE:** Using data through 2022, again, and we're using the
14 same method here for lane snapper that we've used a few times in
15 the past, which is using NOAA's Data-Limited Toolkit and the
16 iTarget model therein, which is an index-based method for assessing
17 the stock, and this is intended to be suitable for modifying catch
18 advice, and, should you decide to do so, you can make such
19 recommendations to the council, as appropriate. It's your floor.
20

21 **DR. FORRESTAL:** Thank you very much. I'm back for lane snapper.
22 This is a slightly different interim analysis, and so this is the
23 third slightly different one you've seen today. Lane snapper was
24 -- This catch advice was last updated in March of 2020, and this
25 had been adjusted slightly from the previous update in January of
26 2020, and that's because the OFL and the ABC were initially
27 presented using total removals, and so A, B1, and B2. The OFL, as
28 it stands now, is landings only, and it does not include discards.
29

30 The catch advice is updated using the iTarget method, and this is
31 part of the Data-Limited Toolbox. This method was initially
32 described and presented during the September 2019 meeting. Lane
33 snapper was last formally assessed during SEDAR 49, which was the
34 Gulf of Mexico Data-Limited Stock Evaluation, and the stock
35 assessment had a terminal year of 2014.
36

37 This approach calculates the total allowable catch, taking into
38 account the most recent index available and then comparing it to
39 the average reference index, and so, if the recent index is below
40 a threshold, one equation is used, and then, if it is above, then
41 the bottom equation is used, and so, for lane snapper, we're in
42 the second equation territory, and so this takes into account the
43 average catch over the reference time series, and, for lane
44 snapper, this is 1999 through 2008. This time series does not
45 change, and this ten-year period is set, and so this was not
46 updated.
47

48 We also have the average index, again over the same reference time

1 series. The thing that has been updated is the recent index, and
2 so this is the average index over the five most recent years. For
3 this update, it encompasses 2018 through 2020.

4
5 **MR. RINDONE:** Through 2022.

6
7 **DR. FORRESTAL:** Sorry. Thank you, Ryan. 2022. The iTarget is
8 adjusted using the average index and using a multiplier, which is
9 a scalar, and this was set during SEDAR 49, based on the assumption
10 that the stock for lane snapper was near MSY during the reference
11 period, and so during 1999 to 2008, and then we have W, which is
12 a smoothing parameter, which informs the catch advice. This is
13 all presented in GERMONT and BUTTERWORTH, and then we have extra
14 slides, if you want to have a refresh on the iTarget method.

15
16 The index that was used, that was recommended for use during the
17 SEDAR 49 process, was the headboat CPUE, and it had the most
18 adequate samples, the most proportion positives available, and so
19 that is what we're using for the interim analysis. This has been
20 updated. The previous catch advice was based off of 2014 through
21 2018, and so now we're looking at 2018 through 2022.

22
23 The figure on the bottom-left is the headboat CPUE, and the orange
24 box delineates the reference period, and then the blue one is the
25 updated, and so the reference period is a longer time series, and
26 then the reference index is slightly higher than what was used
27 previously.

28
29 The figures on the right are just the inputs that go into the
30 iTarget method, and so the middle-top figure is the catch, and
31 this has not been updated, because we don't need to update the
32 catch for the reference time period. The only thing that has been
33 updated is the relative abundance, and that figure is the one at
34 the bottom, and then you have some of the basic parameters that go
35 into the toolbox.

36
37 This gives the OFL distribution, and so we don't get just a point
38 value, and you can see the distribution of the OFL, and so OFL has
39 been set at the 50th percentile, and then ABC is the 30th percentile.
40 In the figure, the solid vertical gray line is the previous interim
41 analysis OFL, which was 1.053 million pounds, and then this most
42 recent update increases that to 1.116.

43
44 It's not a very large increase, and it's pretty much in line, and
45 it's still within the distribution bounds, and then, if you -- We
46 do have some caveats with this, and so the headboat index overall
47 trend is very flat, and so it's not particularly informative, and
48 then, also, the headboat CPUE is, obviously, a fishery-dependent

1 index, and so this index alone may not track the full overall
2 population trend.

3
4 To put this in context, we have the ACL monitoring, and so, for
5 2022, lane snapper was above the ACL, at 106 percent, and then,
6 currently, for 2023, we're at about 43 percent, and so that is all
7 I have, in terms of the update, but I would be happy to answer any
8 questions or to go through it further.

9
10 **VICE CHAIRMAN BARBIERI:** That was great, a great presentation.
11 Thank you, Francesca. With that, I'm going to open the floor for
12 questions or comments, and so, basically, to restate our main
13 charge here, it's to look at this analysis, which uses
14 methodologies that we have previously seen and approved, right,
15 and all of this process started back in SEDAR 49, when we started
16 the Center -- Or they started, the Center, on attempts to apply
17 these data-limited methods, right, to a variety of stocks that we
18 could not assess.

19
20 Really, we did not have enough data to assess using, you know,
21 statistical catch-at-age models or some other model based, you
22 know, assessment method, and so, you know, we're still needing to
23 provide management advice, and we're trying to evaluate then what
24 types of methods could be used to basically develop a more
25 standardized framework, right, to supplement the catch advice that
26 we provide through other means, either landings-based, you know,
27 our landings-based catch advice from the control rule, Tier 3a and
28 3b, versus what we provide with the stock assessment, and so this
29 is something kind of intermediary in nature, right, to try to be
30 a little more inclusive, and, you know, you saw the methodology
31 here.

32
33 We have had management advice through this methodology before, and
34 then it was updated, back in 2020, I guess it was, right,
35 Francesca, and then they are coming back now to again update and
36 see if we would accept this analysis, and, if so, if we wanted to
37 provide management advice to the council. Steven and then Trevor.

38
39 **DR. SCYPHERS:** Thank you, Mr. Chair. I just had a question, from
40 seeing the presentation, and so, on Slide 7, something that jumped
41 out to me was the commercial landings between the two years, and
42 so is that showing that the commercial fishery has already caught
43 more, in the partial year of 2023, then in all of 2022? If so, I
44 was just curious what's the story there.

45
46 **VICE CHAIRMAN BARBIERI:** Peter, do we have to call Superman again?
47 He's online, I think.

48

1 **MR. HOOD:** I think what the table, you know, shows is that, for
2 lane snapper, it's really more of a recreational fishery than a
3 commercial fishery, and so, you know, landings are going to be
4 fairly low for the commercial sector.

5
6 **VICE CHAIRMAN BARBIERI:** Okay. Thank you, Peter. Paul, to that
7 point?

8
9 **DR. MICKLE:** Thank you, Mr. Chair. We were just sitting here
10 thinking about it, and I was asking my neighbor here, and so why
11 does it just say "FES" for 2023? Is it because it's incomplete,
12 when the prior year says "MRIP-FES", and then what waves are
13 included in this recreational 430,527, and is lane -- My question
14 is, is the lane snapper -- Is it a fall-effort heavy on the
15 recreational side, or is that a question for somebody else? It
16 was to the point of looking at the overage from last year.

17
18 **MR. HOOD:** I mean, with the accountability measures, basically, we
19 need to monitor the catch, and, actually, I was looking at what we
20 have for 2023, and they're at about 60 percent now, and that's
21 using -- That's through Wave 3, and the accountability measure is
22 that, you know, basically, we monitor the landings, and, if it
23 looks like they're going to go over, we will, you know, do a
24 closure.

25
26 I think, last year -- I don't know why we went to 106 percent, but
27 probably there was a little bit of an increase later on in the
28 year. What I can do is I can look at some of the landings data
29 that we have, where it's separated out by wave, and I can -- If
30 you give me a chance to take a look at it, I can let you know, you
31 know, which waves are the highest.

32
33 **VICE CHAIRMAN BARBIERI:** Please, Paul.

34
35 **DR. MICKLE:** To that point though, my question is, my first one,
36 is the column here under "Dataset", and you have "MRIP-FES" for
37 the prior year, and then, down here, you just have "FES", and is
38 that because you're just using effort and not the intercept data
39 to get your current landings number through Wave 3, or is it just
40 a -- Maybe Excel cut it off or something, or the slice of the --
41 You know, when you do Excel, it slices off some things.

42
43 **MR. HOOD:** I would have to look at it, but, you know, my suspicion
44 is that it could be that, last year, we were saying, you know,
45 MRIP-FES is how we were talking about FES, and then, you know,
46 this year, we're trying to shorten it a little bit, or it could
47 just be cut off, but, basically, for both years, it's FES.

1 **VICE CHAIRMAN BARBIERI:** Peter, Trevor also has --
2
3 **MR. MONCRIEF:** I guess mine is twofold, right, and I've got one to
4 that point and then just a comment afterwards. The catch of lane
5 snapper over time, over the last five or six years, right, it's
6 kind of -- It's jumped around, and it's been a half-million to a
7 million, right, oscillating back and forth, and so I think -- It
8 would be interesting to see at least what waves are highest, and
9 if there's waves contributing to it, and the other part of that
10 is, to Science Center folks, because the reference time period is
11 1999 to 2008, for landings, it's not incorporating any recent
12 landings or anything else like that, and it's just incorporating
13 the recent index trends and making the comparison to the reference
14 time period?
15
16 **DR. FORRESTAL:** Yes, that's correct.
17
18 **MR. MONCRIEF:** Okay.
19
20 **VICE CHAIRMAN BARBIERI:** We now have Superman online there that
21 can help us. Mike, can you --
22
23 **DR. LARKIN:** I'm far, far from Superman, but just a comment that
24 it is MRIP-FES, and it just got cut off there, and so I also want
25 to point out that keep in mind -- I mean, we focus on FES, and we
26 focus on CHTS, but there are -- You know, this is really a
27 combination of all the data, and so it's got headboats, and it's
28 got LA Creel, and also MRIP-FES, and so just keep in mind it's not
29 just one dataset.
30
31 **VICE CHAIRMAN BARBIERI:** Okay. Thank you for that --
32
33 **DR. LARKIN:** On the wave data, I'm running that right now, and so
34 I'll get back to you with that, and you guys asked what wave is,
35 you know, the peak of the lane snapper, and I'm running that right
36 now, and I can comment to that in a minute or so.
37
38 **VICE CHAIRMAN BARBIERI:** Right. Mike, specifically to Paul's
39 question then, those two cells there, it's really both, and it's
40 just MRIP-FES, right?
41
42 **DR. LARKIN:** Yes, and it just got cut off. It should say "MRIP-
43 FES", and I think it just got cut off, but yes.
44
45 **VICE CHAIRMAN BARBIERI:** Okay. Thank you.
46
47 **MR. RINDONE:** I am texting away with a couple of fishermen that
48 are headboat operators, and they said that, generally speaking,

1 they catch lane snapper consistently throughout the year, during
2 which the season is open, but it does tend to peak in say Waves 3
3 and 4, when there's just generally more fishing activity, like in
4 those summer months, but they do catch them consistently throughout
5 the year, and landings might just be higher then, because there's
6 simply more hooks in the water.

7
8 **VICE CHAIRMAN BARBIERI:** Okay. Jason.

9
10 **MR. ADRIANCE:** Thank you. This might be a Ryan question, in terms
11 of the SEDAR schedule, and I was part of 49, and so I understand
12 the issues with the data-limited, and is this anywhere on the
13 horizon, in terms of assessment schedule?

14
15 **MR. RINDONE:** So we don't have it on there for anything more in-
16 depth than what we're currently doing. There's a lot of things on
17 the list, and so, you know, for lane to move on in, something else
18 is going to have to get hip-checked, and so, you know, for the
19 moment anyway, this is the method with which we've been assessing
20 the stock.

21
22 **MR. ADRIANCE:** That's what I assumed the answer was. Thanks.

23
24 **VICE CHAIRMAN BARBIERI:** Jason, my recollection, you know, from
25 SEDAR 49, is that there wasn't really enough information to conduct
26 ever -- We don't expect, right, that we're going to be conducting
27 a model-based assessment, and so, you know, our control rule has
28 Tier 1, right, assessment-based catch advice, and then Tier 3, 3a
29 and 3b, is landings-based, and so it's landings only, average
30 landings relative to some reference period, and so Tier 2 had been
31 put in reserve for something that was like a more intermediary
32 sort of -- It's not as good, right, as the Tier 1 model-based
33 assessment, but not necessarily as simple, and it was doing just
34 -- It was just using average landings, and so this is where we are
35 right now, and I don't see us being able to get out of there unless
36 the --

37
38 **MR. ADRIANCE:** That's where I was going, in a round-about way. I
39 think, for lane, this is probably it for a while.

40
41 **VICE CHAIRMAN BARBIERI:** Thank you, Jason. John Mareska.

42
43 **MR. MARESKA:** Thank you, Mr. Chairman. Given that this is a
44 fishery-dependent index only, and the caveat that Francesca
45 listed, I thought that, previously, we had asked to have additional
46 information, such as discards and mean length by year, and so that
47 would give us additional information to evaluate whether, okay,
48 they've kind of hit MSY, and the average size is going down, and

1 the discard rates are going up, and so is that something that we
2 could obtain?

3

4 **VICE CHAIRMAN BARBIERI:** Well, I would have to defer to Katie and
5 Francesca on that. It's not currently available in this analysis,
6 right, is your point.

7

8 **DR. FORRESTAL:** I think this was a question in the 2020 updates,
9 and so, initially, it did have discards in the OFL calculations,
10 but I'm not entirely sure why the SSC decided to just use landings
11 only, and I don't have -- I wasn't employed by the Center then,
12 and so I don't have the historical knowledge on that, but I don't
13 think we have length bins for lane snapper, or, if we do, I don't
14 have them personally right now.

15

16 **VICE CHAIRMAN BARBIERI:** John.

17

18 **MR. MARESKA:** I just didn't know if that was something that the
19 at-sea observer program had, because it's primarily a headboat
20 fishery, and so I figure there's got to be some data out there
21 somewhere.

22

23 **VICE CHAIRMAN BARBIERI:** Yes, and I will have to check with Bev
24 Sauls, and I don't think she's on, or, yes, she is. She's on, and
25 so, Bev, if you can answer that question for John Mareska about
26 the availability of lane snapper lengths, and I guess total catch,
27 right, landed and discards, from the headboat at-sea sampling, and
28 that would be helpful.

29

30 **MS. SAULS:** Sure. We definitely observe them in the charter boat
31 and headboat ride-alongs that we've been doing since about June of
32 2009, and so that is something that could be provided. We would
33 have measurements for harvested and discarded fish, though I don't
34 believe that fish is discarded very often, unless they're just
35 really small.

36

37 **VICE CHAIRMAN BARBIERI:** Thank you for that, Bev. Katie and then
38 Peter.

39

40 **DR. SIEGFRIED:** If we're opening this up for a bigger discussion,
41 it's probably worth discussing issues with the headboat index as
42 the index that we're using for this method, and, now, it's not a
43 true interim, and it's actually sort of an update of a -- I mean,
44 it's not sort of, and it is an update of a data-limited assessment
45 method, and, usually, we try to use independent series.

46

47 Now, when this was assessed in 49, and Skyler is on the call, if
48 you all want to hear the original scientist that looked at all of

1 this, the headboat time series was considered more valuable at the
2 time, because it was a longer time series. However, there have
3 been a number of regulations put in place that will affect its
4 usefulness in tracking relative abundance of any stock, and that's
5 especially problematic if you're using it as the only index, and
6 so there are reasons to reconsider this method, or, sorry, this
7 index to use in this method, and there are independent series that
8 could potentially be used, but that's outside of SEDAR 49 and any
9 extensions we've done since then.

10
11 **VICE CHAIRMAN BARBIERI:** Thank you, Katie. Peter.

12
13 **MR. HOOD:** I took a quick look at the landings, and, for
14 recreational landings, it's generally Wave 3 and 4 which have the
15 highest landings, and they -- As a rule of thumb, it accounts for
16 about half the landings for any given year, and then I looked at
17 the commercial landings, and that's generally between a thousand
18 to 3,000 pounds a month, and I really didn't see any pattern there,
19 just, you know, giving it a cursory look, and so just to give a
20 little bit of a feel for what it's like annually.

21
22 **VICE CHAIRMAN BARBIERI:** Thank you, Peter. That was super helpful,
23 and, John, to your point about discards, remember that our ABC
24 recommendations, right, for ACL are always for landings, right,
25 because we don't actually monitor discards, and so discards can be
26 included in the analysis, right, and we can have assessment outputs
27 that output both landings and discards that, right, come out of
28 the assessment, but the ABC and ACL recommendations are always for
29 landings, because those are the ones that we monitor. I see this
30 is why we had a problem with the last analysis that included both
31 landings and discards, because this is averaging things.

32
33 Okay, folks, and so here we are. Can we go back, Jess, maybe to
34 -- The one before, or maybe the one before. That is what we have
35 there, and what we approved the last time as management advice,
36 catch advice, coming out of this analysis that was completed in
37 2020, right, and the Center is coming back and providing an update
38 to that now, and so, basically, it extended the time series of
39 data used and is providing an update to that now, with new OFL and
40 ABC, but, as we had discussed, right, whether we're going to use
41 30 or 40 percent, right, as the -- I don't remember, and what was
42 that, Francesca?

43
44 **DR. FORRESTAL:** I don't remember, and I can tell you why landings
45 only was used, as opposed to discards, and so this was because the
46 ACLs are defined using the Generic ACL Amendment, and so those are
47 only monitored in landings only, and so that's why this is done
48 landings only now.

1
2 I think the different percentile is due to the precautionary
3 principle, and so the OFL is the 50th percentile of the
4 distribution, and then, to be more precautionary for the ABC, it
5 does down to 30 percent.

6
7 **VICE CHAIRMAN BARBIERI:** So those are the percentiles in like a P*
8 type of approach? I see. Okay. It's to generate a buffer between
9 OFL and ABC, and that makes perfect sense. Thank you, Francesca.
10 Superman, please.

11
12 **DR. LARKIN:** My comment is kind of late, but I was just following-
13 up on Peter's comment about the landings in the waves, and they're
14 also dominated in Florida. I looked at the recreational landings,
15 and so the west coast of Florida has like over 95 percent of the
16 lane snapper landings each year, and so I just wanted to point
17 that out.

18
19 **VICE CHAIRMAN BARBIERI:** So Superman was superseded by another
20 superhero. Who would you be, Peter? The Silver Surfer? Yes. It
21 took you no time to come up with that, and that has been in the
22 back of your mind for a while.

23
24 All right, folks. We have here the results of this interim
25 analysis, and we have values of OFL that were updated with the
26 latest data, using previously-approved methodologies, and, in the
27 books, what Mr. Rindone was telling me is that 30 percent, the
28 percentile there, was what we considered as a separation between
29 OFL and ABC, and so I'm looking for a motion from the committee so
30 that we can proceed with the use of this information for catch
31 advice. Trevor.

32
33 **MR. MONCRIEF:** I make a motion to use the 30th percentile -- Do we
34 have to do the BSIA thing here, because we just had a conversation
35 about it?

36
37 **VICE CHAIRMAN BARBIERI:** Well, I don't think it's necessary, and
38 it's what we have done today in -- It's not absolutely necessary,
39 and we can make it, and our framework told us that that would be
40 appreciated, but it's not an absolute requirement that that be
41 explicit in our motions.

42
43 **MR. MONCRIEF:** All right. **The SSC recommends to update catch**
44 **advice for lane snapper using the** -- What are we calling this?

45
46 **MR. RINDONE:** The 2023 SEDAR 49 interim.

47
48 **MR. MONCRIEF:** **The 2023 interim analysis for lane snapper. The**

1 **OFL is recommended to be** -- We're doing the 30 percent, right,
2 because that's what we did last time? **It's 1,088,873 pounds whole**
3 **weight. Sorry. The OFL is 1,116,331.**
4
5 **MR. RINDONE:** Let's keep it to three sig figs, please, because
6 there is -- There is really no expectation that we would have the
7 ability to manage to that 331 pounds.
8
9 **MR. MONCRIEF:** Not with that attitude. I'm just saying. All
10 right, and so we're going to --
11
12 **MR. RINDONE:** So like 1.116.
13
14 **MR. MONCRIEF:** **Million pounds. The ABC is recommended to be 1.088**
15 **million pounds whole weight in FES units.**
16
17 **MR. RINDONE:** It's already in FES units now, and so you don't need
18 to specify the units, because they wouldn't be changing, and you
19 can delete the "for lane snapper" at the end of the first sentence,
20 because you already specified that ahead of it in that same
21 sentence. Then, where it says "million lbs", that can just be
22 "lb". Thank you, Mike Travis, for pointing that out to me, and
23 it's rooted in some Latin connotation, but --
24
25 **VICE CHAIRMAN BARBIERI:** Okay, and so we have a motion from Trevor
26 Moncrief. Do we have a second for this motion? We have a second
27 from Dr. Crabtree. He seconds the motion. Is there discussion?
28
29 **DR. MICKLE:** Very quick, I support the motion, because it's what
30 we did in the past, and we have no indication of anything else
31 raising flags. Thank you.
32
33 **VICE CHAIRMAN BARBIERI:** Thank you for that, Paul, because it's
34 good to have that on the record, that explicit, as you presented
35 it. Any other discussion points or questions from the committee?
36 Harry Blanchet.
37
38 **MR. BLANCHET:** I do think that it would be worth including that
39 **this is in FES units, as there might be an FES prime at some point**
40 **in the near future.**
41
42 **VICE CHAIRMAN BARBIERI:** So, Trevor and Roy, are you okay with
43 adapting this to include, just in between parentheses there, "in
44 FES units"?
45
46 **MR. MONCRIEF:** I think there's been enough conversation between
47 **all that that it's worth including.**
48

1 **VICE CHAIRMAN BARBIERI:** Okay, and so the motion on the board is
2 providing updated OFL and ABC values for Gulf lane snapper, using
3 the latest interim analysis provided by the Science Center, and so
4 does anybody have any concerns with this motion? Is there any
5 opposition to this motion? Online, any hands up?
6

7 **DR. PATTERSON:** Luiz, I would vote no for this, if you're trying
8 to figure out whether to go by proclamation or have a vote.
9

10 **VICE CHAIRMAN BARBIERI:** Okay. Any other objections to this
11 motion? **Hearing none, the motion carries with one objection.**
12 Thank you, everyone, and, although we are moving along very well,
13 I was reminded that we had one item that we had discussed about
14 potentially revisiting before we conclude our meeting today, and
15 that's the table of management options, right, on -- That one that
16 Steve Saul --
17

18 **REVIEW: POSSIBLE MANAGEMENT MODIFICATIONS FOR GAG AND BLACK**
19 **GROUPEL (CONTINUED)**
20

21 **DR. SAUL:** There is a slightly updated version, and I don't know
22 if it went to Meetings, that Harry Blanchet provided a couple of
23 useful minor edits to. I can forward it to -- I don't think you
24 got it yet, and so let me forward it.
25

26 **MR. RINDONE:** We also had a version that came in from Jim Tolan,
27 and so I wanted to ask you, Mr. Chair, if there was a method with
28 which you wanted to proceed with looking at these, before we start
29 sending a bunch of versions around.
30

31 **VICE CHAIRMAN BARBIERI:** So a bunch of versions?
32

33 **MR. RINDONE:** I mean, we only have two right now, but, in the event
34 that others wanted to send theirs in, I thought it would probably
35 be better to have some kind of a plan for how to look at them.
36 This is all kind of ad hoc, but Trevor has one too, he says.
37

38 **MR. MONCRIEF:** Let's put up a strawman and roll.
39

40 **VICE CHAIRMAN BARBIERI:** I don't understand this as being multiple
41 versions, and I believe that, when Steve sent out -- This is just
42 my interpretation, and so, when Steve sent out his version, right,
43 that was for the committee to look at this and then provide any
44 edits, and so what I see for this, and I think this is what Steve
45 was trying to say, there has been updates to this, unless you
46 constructed a completely separate one, Jim?
47

48 **DR. TOLAN:** When I came back from the rain shower last night,

1 that's what I spent my evening doing, and it's very similar. The
2 one sort of added thing I did was I provided what I would consider
3 to be my ranking, and what I prefer as the option for it, but, in
4 terms of, you know, what I put together, I think it's very similar,
5 and it went by the matrix, and that's sort of the backbone of it,
6 and so that's what I did last night, and I didn't get the version
7 from Steve until this morning, and so, after I got here, I sat
8 down and noticed it was in my inbox.

9
10 **VICE CHAIRMAN BARBIERI:** If I may, Jim, if you could then just
11 look at what we have there, which integrates Steve's and Harry's
12 input, right, and see if you would propose any -- If you have any
13 concerns with this or whether you would propose any modifications
14 to what they proposed.

15
16 **DR. TOLAN:** I looked over it real quick, what Harry had added to
17 it, but, from what I saw from earlier, from Steve's version,
18 they're very, very similar.

19
20 **VICE CHAIRMAN BARBIERI:** In that case, I would just proceed with
21 the one that Steve put together, because Harry already provided
22 input to that, and you can provide additional input here. Is that
23 okay?

24
25 **DR. TOLAN:** Sure.

26
27 **DR. SAUL:** Harry mostly corrected my inability to spell certain
28 words.

29
30 **VICE CHAIRMAN BARBIERI:** Okay. Again, I think what we're trying
31 to accomplish here is not really, you know, make choices for the
32 council, right, and so the idea is to rank this as a qualitative
33 evaluation of the information here, based on our best professional
34 judgment, right, and then we would try and rank this in the order
35 that we feel -- Which one of these measures are more likely to
36 achieve the reductions in fishing mortality that have been targeted
37 by the rebuilding plan, and so we provided, right, an ABC
38 recommendation to the council, and the council then has developed
39 a regulatory amendment that includes the rebuilding plan.

40
41 Then we need to know, and, you know, there are some questions now
42 whether the current regulations that are in place would be enough
43 to reduce fishing mortality to that 80 percent, I think is the
44 reduction in fishing mortality that we are trying to achieve with
45 our ABC recommendation, and so what we're going to do here is
46 basically based on that, to provide a ranking, so the council can
47 have some guidance on what we believe would be the most likely to
48 be successful in reducing fishing mortality to the degree that it

1 needs to be, and so I have a couple of people here in the queue,
2 and so I will start with Trevor, and then I have Will and then Jim
3 and then Roy.

4
5 **MR. MONCRIEF:** All right, and, before we start ranking, I just
6 wanted to bring up one point, to see if everyone agrees, and so it
7 was Mike's idea, a slot limit for gag harvested inshore, and area-
8 based enforcement and differentiation of those regs in between
9 those areas is likely not enforceable, and it creates a large, to
10 me, conundrum on the side of trying to make -- My preference would
11 be to just change that to "slot limit" and just -- If it's put in,
12 right, it would be blanket, because I don't think that area-based
13 restriction is enforceable, and, therefore, probably it's going to
14 be a hard one to consider. If that changes, then it changes my
15 rank for that individual thing, but I just wanted to bring that
16 up.

17
18 **VICE CHAIRMAN BARBIERI:** Roy, to that point?

19
20 **DR. CRABTREE:** Yes, and I think he's right. If you try to have a
21 slot limit in just one geographic location, that's not going to be
22 enforceable.

23
24 **VICE CHAIRMAN BARBIERI:** Okay. Jim Tolan, to that same point?

25
26 **DR. TOLAN:** To that same point, I took it, yesterday, that the
27 vast majority of the discards that would apply to this slot limit
28 were discards that were -- They were undersized fish, and so you
29 would have to make the -- Move the slot -- To go outside the slot
30 that is in the current place for the biology of the species, and
31 so, if I'm wrong in that, please enlighten me, because I thought
32 that most of those discards were undersized fish to begin with in
33 the nearshore area. Thank you.

34
35 **VICE CHAIRMAN BARBIERI:** Yes, and Mike Allen, to that.

36
37 **DR. ALLEN:** Just a comment, and I definitely get the issues with
38 enforcement on this. I think where I was trying to go with this
39 slot limit, and possible increased size limit thing, is the idea
40 of that -- It's to focus on escapement, to focus on the number of
41 fish that are caught in shallow water, relatively shallow water,
42 where they don't have excessively high discard mortality, and to
43 improve escapement out to the reproductive population, mature
44 females being transitioned into males, and so a slot limit itself,
45 across-the-board, could possibly do that, but it's -- You know,
46 it's a fair point, but I think that -- So 7 and 8, I would say, is
47 look at length limits, to try to increase escapement to the adult
48 population in general.

1
2 **VICE CHAIRMAN BARBIERI:** Thank you, Mike. Will.
3

4 **DR. PATTERSON:** Thanks, Luiz. As I understand this, this is a
5 ranking proposed by Steve that would -- That is giving the council
6 some feedback from the SSC about which of these management measures
7 we think are more likely to meet the objectives of decreasing the
8 catch, as well as trying to minimize discards, and, you know, I -
9 - We haven't seen anything analytical that incorporates all of
10 this formally into an analysis.
11

12 The slot limit idea is just an idea at the time, and we've seen
13 other species that, given enough discards, or a high enough discard
14 mortality rate, that a slot limit actually does the opposite of
15 what you're trying to attempt by a conservation measure, and so,
16 you know, all of these are at the disposal of the council, but I
17 really don't think it's our job, as the SSC, to rank something, or
18 to provide advice, based on our gut, based on our instinct. I
19 think it's a bad idea.
20

21 **VICE CHAIRMAN BARBIERI:** Thank you for that, Will, and, to that
22 point, I really hear you there. I mean, I see your point, and I
23 think it's a valid point. What I would like to do is, if there is
24 something here that the committee would like to see the analysis,
25 please let's be specific about it and develop some motions, right,
26 that we can request an analysis be brought before the committee.
27

28 You know, I would rather not go to Panama City and tell the council,
29 well, the SSC actually looked at these options, and we didn't have
30 anything to say, because there was not an analysis in front of us,
31 and so we decided not to provide any guidance at all, and it would
32 be easier for me to explain to them that enough analysis, or enough
33 detailed analysis, that we felt was necessary for us to properly
34 evaluate these options would be X, Y, and Z, and please have those
35 to us by a certain date, and then we can provide more informed
36 guidance.
37

38 **MR. RINDONE:** So, with respect to that, I think it's going to be
39 difficult to produce some of the data that you guys are going to
40 want to see specifically related to discards, because that's going
41 to be based on a June 1 open, and what we've seen in previous
42 years, and until get through a couple of years, we're just simply
43 not going to have apropos discard information.
44

45 Also, with respect to discards, and Cell B2 there, it would
46 challenge -- You know, we have high-grading listed, and an increase
47 in discards would certainly be something that we would expect to
48 happen there as well, because, generally speaking, when we have

1 discussions about the performance and execution of recreational
2 fishing activity, it's that it's going to happen, even if a single
3 subject species is closed, and, typically, there are other things
4 to go catch, and other reasons to go fishing, and so there's still
5 some probability of discarding.

6
7 If you're limiting -- If you know that the harvest that's possible
8 is an excess of the retention limit that you're placing, then you
9 would expect there to be an increase in discards over your status
10 quo, and so, for all of those that are listed in A2, 3, 4, 5, 6,
11 all of those would be expected to increase discards, and, thus,
12 discard mortality, over the status quo.

13
14 **VICE CHAIRMAN BARBIERI:** Right. Before I go back to you, Trevor,
15 let me see -- Will, do you have something else, after that
16 discussion, or any additional thoughts?

17
18 **DR. PATTERSON:** Well, it's just related to what you were saying
19 before, Luiz, about you don't want to go to Panama City and say
20 that we considered this, but we don't have any advice, and I think,
21 you know, we could develop a consensus statement in the report
22 that basically said that we examined all of the potential measures
23 that were put before us, and there are benefits, and there are
24 costs, to implementing any of them, with respect to their
25 likelihood of helping to rebuild the gag stock, but, without actual
26 analytical products to evaluate the relative strengths and costs
27 of these proposed measures, the SSC didn't really have an objective
28 way to evaluate them, one against the other.

29
30 We could present the matrix that was shown to us about the
31 strengths and weaknesses of the measures, and I think the council
32 is aware of those, and, if we need to develop a series of
33 recommendations for analyses, you know, I think the folks in the
34 room, or online, can help do that, but I don't think we're -- I
35 don't think we've just dismissed this altogether. There have been
36 ideas proposed, but the question I have is how do we actually rank
37 them, at this stage, without objective criteria and information?

38
39 **VICE CHAIRMAN BARBIERI:** Thank you for those thoughts, Will, and,
40 before I go to Mike on that point, let me just ask here our council
41 representatives, right, for some guidance, and Ryan as well, on
42 the timing, right, and what's the council timing, you know, in
43 terms of receiving this information, and how much time would we
44 have to perhaps request and receive additional information?

45
46 **MR. RINDONE:** Well, some of it you're just not going to get, like
47 the discards information, and that doesn't exist, and it won't
48 exist until, you know, sometime later than next year, and the whole

1 purpose for the council cleaving off the consideration of
2 evaluation of spatial areas for gag was done to move more quickly
3 on this stock, but, as far as like the actual, you know, how
4 discards would happen during this fishing year, well, this fishing
5 year is in progress, and so we're just not going to have that
6 information, and that's a big component of trying to figure out
7 how much of a negative effect the increase in discards would have
8 for a slot limit or a bag limit reduction or the imposition of any
9 of the vessel limit proposals that are on there.

10
11 **VICE CHAIRMAN BARBIERI:** Thank you for that. I mean, that helps,
12 right. Mike.

13
14 **DR. ALLEN:** Just to that point, well, first of all, I agree with
15 what Will said, and I don't think we can rank these. We don't
16 have enough information in front of us to even really, you know,
17 put a weight on these, or rank them in any way, and I think it
18 would take more analysis.

19
20 To your point, Ryan, though, I agree that we're not going to have
21 the observed change in discards in response to the current
22 management, or any other scenarios, but we could do this in a
23 simulation context, to look at relative discarded fish across some
24 of these policies, and so it could be done, but it wouldn't be the
25 actual empirical discard estimates.

26
27 **MR. RINDONE:** Well, if that's a sacrifice that you guys are willing
28 to consider for this, then that's your prerogative to identify
29 what you're willing to look at.

30
31 **VICE CHAIRMAN BARBIERI:** But, again, what would be the timeline
32 for the progress? This is exactly what I was asking, right, and
33 so, usually, these regulatory amendments, right, have some
34 expected milestones along the way, right, that you go through the
35 process, and so you have an estimate of when you start identifying
36 preferred alternatives and when you go to final action, right, and
37 all of that, and so I would just like to know where are we in that
38 process, and would we have time to complete some of this analysis,
39 you know, before we provide --

40
41 **DR. FRAZER:** That's exactly what I was asking Ryan, and so this is
42 a final action item, I believe, right, in three weeks, or what is
43 it?

44
45 **MR. RINDONE:** It's revised options. Tom, you're going to give me
46 a heart attack, and it's revised options for the October meeting,
47 and the soonest that we could take final action on it, if you guys
48 lined all your ducks up, would be in January, but I can't speak to

1 how quickly simulation analysis could be conducted using the
2 existing data. You know, we would need to have conversations with
3 the Center and the Southeast Regional Office before we could talk
4 about any of that, but you guys are not meeting in January.

5
6 Everybody break out your calendars, and you're meeting the last
7 week of February, and we're going to be reviewing the SEDAR 74
8 research track during that time, along with yellowedge grouper,
9 which is SEDAR 85, and then there are a couple other things that
10 are on that list too, but I expect it to be a solid three to three-
11 and-a-half days just for those things. I can't guarantee there is
12 going to be time to add this to it, and I would certainly not want
13 to tell you guys that, oh, you only have an hour to talk about
14 this, and I would want to give you the breathing room to give the
15 council the information it needs.

16
17 That said, and like we had said yesterday, you guys have provided
18 a lot of valuable feedback, simply through your discussions to the
19 council, and this -- Being able to go through is also informative
20 to the council, if you guys want to continue to tweak this, even
21 with the caveat that Dr. Patterson had mentioned, which I tried to
22 take down near verbatim, about examining the potential measures
23 and the costs and benefits associated with them, but not having
24 the necessary data to evaluate the strengths and weaknesses of
25 each, and being unable to explicitly inform the council as to the
26 best course of action.

27
28 I don't think the council is asking you to tell it that you should
29 do this, but not that, because that is the council's prerogative,
30 as far as management is concerned. Rather, what you think -- The
31 sorts of things you could say is, based on looking at the bag limit
32 analysis, it appears that there is little benefit to reducing the
33 bag limit to one fish per person per day. However, we heard this
34 feedback, and you might consider that, also.

35
36 Looking at the vessel limit analysis, it appears that there would
37 be little effect by, you know, imposing a four-fish-per-vessel
38 limit. However, as you increase the -- Or as you decrease the
39 amount of that vessel limit, you do appear to see an increase in
40 the fishing season duration, and you're not telling them to do it,
41 but it's just an interpretation of the information that was
42 presented to you, and it really does allow you to stay in the
43 science lane and just talk about the data, and then the council
44 can make whatever decision it's going to make, whether it decides
45 to adopt any of these or none of them.

46
47 **VICE CHAIRMAN BARBIERI:** Right, and I'm going to go back here then,
48 in this discussion, to my queue, right, because there are some

1 people that have been patiently waiting. Jim Tolan.

2
3 **DR. TOLAN:** Thank you, Mr. Chairman, and the one option that I put
4 on the list that's not explicitly from that matrix I borrowed
5 heavily from Trevor yesterday, and it was basically, we've already
6 reduced the ACL and ACT for this species way down, and we've just
7 opened the season not long ago, and so my idea was just give it a
8 fishing season, see what this does to the stock, and then address
9 it again later. That gives us more time to work with some of these
10 simulations, or whatever, and I ranked that number-one, and that
11 was my preferred option, to just give it a year of fishing. Thank
12 you.

13
14 **VICE CHAIRMAN BARBIERI:** To that point, that's the lowest row there
15 on that table, to use just the ACT and ACL. Okay. Roy.

16
17 **DR. CRABTREE:** Well, as I look at this, I think most of these
18 measures are unlikely to change fishing mortality at all. I mean,
19 the bag limit, the vessel limit -- It says there that it reduces
20 the overall catch, but I don't think that's accurate, because they
21 would add more days to the season, and so I think it's just a
22 management decision of if you want to keep fewer fish and get more
23 days or what, and I don't think the net effect of it, on fishing
24 mortality rate, is likely to be much of anything.

25
26 We talked about -- I think the slot limit -- You have to apply it
27 to all depths, and then you're going to have people throwing away
28 really big fish, and I don't think that's a good idea.

29
30 The commercial spawning season closure, we talked about,
31 yesterday, how it's not likely, because of the bycatch fisheries,
32 and I think, if you were going to go down a path like that, you
33 would need to broaden it to include like the whole grouper fishery
34 or something like that, which I think would --

35
36 **VICE CHAIRMAN BARBIERI:** Well, see this is the kind of guidance -
37 - I mean, right there, and I was looking at that, Roy, the
38 commercial spawning season closure, right, and, I mean, just right
39 there, you provided some thoughts, right, about the disadvantages
40 of that, and, if you don't do a spawning season closure, just say
41 the concerns are, right, that this one --

42
43 **DR. CRABTREE:** I think that's in the discussion we had the other
44 day, and you can cover it, and now the thing that seems to be --
45 That I don't see in here anywhere, that we did talk about a little,
46 is changing the timing of the recreational fishery and looking at
47 what species are caught together and see if timing the opening of
48 the gag fishery, for example with the opening of red snapper, might

1 result in some reduction in discards.

2
3 I think that would be an unpopular choice, and clearly those guys
4 fishing gag in the fall wouldn't like it, but it might have some
5 benefits, in terms of discards, although I suspect that it would
6 be a small one. Basically, I think the point to the council, Luiz,
7 is that these are mostly management calls and aren't likely to
8 have much impact on recovery or anything.

9
10 **VICE CHAIRMAN BARBIERI:** Okay. Yes, and that's information for
11 the council. Okay. Doug.

12
13 **MR. GREGORY:** Thank you. I think -- I don't have much more to
14 add, after the recent conversation, and I was beginning to think
15 that nobody was listening to me. I mean, an 80 percent reduction
16 in the quota is your recovery plan, and it seems, to me, from my
17 experience, and I think everybody else on the panel's experience,
18 there is an interest, in the recreational fishery, of having as
19 long of a season as possible, and at reducing discards as much as
20 possible, and there's -- With extending the season, clearly the
21 one-fish bag limit will have an impact, even though the number of
22 trips that don't exceed one fish may be small, and Ryan's analysis
23 showed that, on average, it's a 22 percent reduction in the
24 harvest. That is nothing to, you know, ignore.

25
26 The testimony we got yesterday shows that it could be even more
27 than that, because a lot of these people that are very good are
28 not going to public boat ramps, and they're probably not being
29 interviewed, and so the ACL is carrying all the water, and, if
30 there's anything the council can do to extend the season, or reduce
31 discards, and I think a slot limit would increase discards, it
32 would be good.

33
34 The commercial fishery has IFQs, and they're being reduced 80
35 percent. What little bit of fishing might occur during the
36 spawning season is at least going to be reduced 80 percent, unless
37 everybody saves their IFQs just for that time period. If that
38 does happen, then we'll know that, from the VMS and the landings
39 data, and then a closure could be implemented as a measure of --
40 As an additional measure to protect the spawning stock, to protect
41 the reproduction, but, by god, an 80 percent reduction in fishing
42 mortality is going to go a long way.

43
44 **VICE CHAIRMAN BARBIERI:** Right, and, Doug, just to clarify, in an
45 ideal world, if that 80 percent -- Make no mistake. If the 80
46 percent reduction in quota, or fishing mortality, is actually
47 realized, by all means, we don't have to go any more, right, but,
48 if you say, okay, how many times has that recreational grouper

1 quota been exceeded in the last five years, I would have to say
2 five, because it happens quite often, right, and so, again, the
3 council's concern here is are we able to meet our rebuilding
4 schedule and reduce fishing mortality just by reducing the ACL, or
5 what measures are going to help us get there in a more realistic
6 way.

7
8 **MR. RINDONE:** Just another clarifying thing. In B-whatever-it-
9 is, for use ACT and ACL only, with challenges listed as this,
10 together with the current size limit, has not rebuilt the stock
11 thus far, and also in reference to what Mr. Gregory and Dr.
12 Crabtree said, we haven't even implemented this 80 percent
13 reduction yet, and the interim measure is in effect now, which,
14 you know, we're not going to see the results of for a while, and
15 so I don't know that it's necessarily fair to say that what we've
16 done, which we just did, you know, five minutes ago, geologically
17 speaking anyway -- It hasn't even really had any time to have an
18 effect yet, and so we don't know if it's going to have an effect,
19 and so you guys might reconsider the language of the challenge, is
20 all I'm saying.

21
22 **VICE CHAIRMAN BARBIERI:** Yes, and we can rephrase that as we go
23 through our report. Josh.

24
25 **DR. KILBORN:** Thank you, and so I tend to agree that we don't
26 really have a good way to rank any of this stuff, and we only saw,
27 you know, an analysis on a few of these options, and so, you know,
28 this is what management strategy evaluation was designed for,
29 right, is figuring out how changes to management strategies affect
30 the population, and so that's what I think really needs to be done
31 here, is these all need to be put through a rigorous MSE process,
32 so that we can start figuring out, when we pull this lever, how
33 does that affect our response?

34
35 Like I said yesterday, this isn't just a build-up-the-biomass
36 problem, right, and we've got a huge problem with the sex ratios
37 here, and I don't think we're going to address that with an ACL.
38 Thank you.

39
40 **VICE CHAIRMAN BARBIERI:** Thank you, Josh. I will go to Tom Frazer.

41
42 **DR. FRAZER:** So I didn't mean to give Ryan a heart attack, but I
43 wasn't remembering if we were, you know, headed towards a final
44 action in this meeting or the January meeting, but the fact of the
45 matter is it's close, right, and there are a limited number of
46 action items in the document, because certainly by January, in
47 order to implement it by the fishing season for 2024, you have to
48 have it done, and so there is really only a few things that I think

1 that we realistically could consider in the short-term that are
2 already in the document, the bag limits, the vessel limits, and
3 the commercial spawning season closure.

4
5 Some of the other things might come along in a future document,
6 but, I mean, again, it's okay, from my perspective, if Luiz wants
7 to capture the comments around the table, because, I mean, the
8 fact that you've listed them out, right, and your options are
9 already here, but there's no -- My summary of these comments are
10 there is no real obvious biological benefits to anything, given
11 that you're likely to harvest all of the available quota, right,
12 and you're extending the season one way or the other, and the
13 question really is are you having a negative impact on fisheries
14 mortality and on the population as a whole.

15
16 This kind of gets back to the question that I asked David Griffith
17 earlier, right, and so then what you're trading off is, well,
18 what's the economic benefit, potentially, of extending the season,
19 you know, with a reduced bag limit, possibly, and there's an
20 economic benefit, but is there some other, you know, benefit that
21 I haven't measured yet, and that's the discussion item, right, and
22 I'm not sure we have anything but kind of a subjective conversation
23 and overview that Luiz might provide to the council in October,
24 but there's not a lot that we can do in the short-term, and so I
25 would focus my attention on those three things, for right now, and
26 ask yourselves if there is a consensus, at least, or, you know,
27 some agreement with what I just told you from my interpretation of
28 the data, or that discussion, excuse me.

29
30 **VICE CHAIRMAN BARBIERI:** Thank you for that, Tom, to clarify
31 things. Steven.

32
33 **DR. SCYPHERS:** Thank you. Just for one follow-up on kind of what's
34 in the spreadsheet as impacts to fishers. You know, recognizing
35 that there's not an opportunity to do something very broad and
36 systematic, is this an opportunity where you could go to the APs
37 with this small number of things and say, you know, how does this
38 play out in front of you, because I like seeing that, you know,
39 equally listed in a spreadsheet, but, without information on it,
40 I had a real hard time thinking about how we could rank those.
41 The public testimony yesterday was really valuable, but it's hard
42 to interpret that when you could get a diversity of perspectives,
43 if you were able to do something more systematic, and it seems
44 like APs might be the fastest, simplest way to do it, but that's
45 just one thought on that particular kind of objective.

46
47 **VICE CHAIRMAN BARBIERI:** Ryan.

1 **MR. RINDONE:** They will see it Monday. They will see the
2 presentation that I gave you guys on Monday. Unless this rapidly
3 gets into a place where you guys are collectively happy with it,
4 I don't know that I would put this in front of them, but they will
5 see the presentation, which has the options for reducing the bag
6 limit to one fish and then the vessel limit and the commercial
7 spawning season closure, and I have every expectation of getting
8 lots of feedback.

9
10 **VICE CHAIRMAN BARBIERI:** Thank you. Steve Saul, you had a comment
11 that you wanted to make?

12
13 **DR. SAUL:** I was just going to -- To Josh's point, I think gag is
14 -- As the Science Centers move to starting to ramp-up MSEs, I think
15 gag is definitely, from what we've heard the past two days, a ripe
16 candidate for going through that process, and particularly given
17 that it's commercially and recreationally-important, and feel free
18 to --

19
20 This is my late-night sort of recollection of our conversations,
21 and pirating Mr. Rindone's talk, but, obviously, not everything is
22 in there, and so, you know, if this sort of format is useful for
23 folks, great. If it's not, at least it helped us carry on the
24 discussion, and that's great too. I also -- The ranking column is
25 blank, because I also sat there for a while not able to rank them,
26 and so --

27
28 **VICE CHAIRMAN BARBIERI:** Trevor.

29
30 **MR. MONCRIEF:** All right. Quick, and we've got bag limit, right,
31 which is likely the impact is undersold, because of the prevalence
32 of private-dock fishermen, and so that's a point to make. It's
33 not just extending days, right, but it also might decrease the
34 likelihood of exceeding in a given wave, which is an important
35 point to make. I have another scenario that I would like to
36 propose, and I will probably get stuff thrown at me, but L50 for
37 transition, and what is the inch length? That's fine, and so what
38 I would at least propose, or might consider, right --

39
40 **VICE CHAIRMAN BARBIERI:** (Dr. Barbieri's comment is not audible on
41 the recording.)

42
43 **MR. MONCRIEF:** We talked about a slot limit, and, from the
44 presentation, I think it was around thirty-two inches, something
45 like that.

46
47 **VICE CHAIRMAN BARBIERI:** Transition?

48

1 **MR. MONCRIEF:** Yes, the L50 of transition, and so if the goal,
2 right, sex ratio is an issue, and we've debated that back and
3 forth, and I think it's worth, if we're going to talk about slot
4 limits -- You don't want one that's going to be so narrow that it
5 increases discard mortality to a point where it's detrimental, but
6 you don't want it to be so wide that it has zero impact at all.

7
8 I think something to consider might be one that is the current
9 minimum size limit of twenty-four inches to the L50 of transition,
10 and then try to compare that with the length distributions, and it
11 looks like there's a little node at thirty-four inches right now,
12 right, and so there's a little tick of fish that get caught that
13 are of the upper size reaches, and then compare that with the
14 potential discard mortality those fish might face if you have a
15 slot limit. I think it's a reasonable thing to look at, and the
16 sex ratio is truly concerning.

17
18 **VICE CHAIRMAN BARBIERI:** Thank you, Trevor. That's a good point,
19 and, while Sue is coming up with those values, Josh.

20
21 **DR. KILBORN:** Thank you. I just want to ask a question, just so
22 that I know the answer, really. If we do a slot limit, then I'm
23 assuming that we're going to increase discards in deep water of
24 large animals, right, and so that's going to presumably work
25 opposite of what we are shooting for here.

26
27 **MR. MONCRIEF:** That's why I said, you know, compare that with the
28 potential discard mortality, because, I mean, the fish are going
29 to be kept and killed anyway, and so you kind of have to strike a
30 balance.

31
32 **VICE CHAIRMAN BARBIERI:** To Tom's --

33
34 **DR. KILBORN:** We don't have discard mortality data on those,
35 because they don't get released right now. They keep those fish,
36 and they don't send them.

37
38 **MR. MONCRIEF:** Which --

39
40 **DR. KILBORN:** The big ones they catch offshore. They're not
41 releasing those, right?

42
43 **MR. RINDONE:** Well, I mean, yes. Out-of-season, they have to,
44 and, if there's other reasons for regulatory discards, like they've
45 already met the bag limit, then, yes, they have to turn those fish
46 back, and our expectations for discard mortality, once you get
47 beyond thirty or forty meters, and Sue can speak to this too, it
48 goes up considerably, and it's even more dramatic for larger

1 animals, because they have larger abdominal cavities, and, thus,
2 more gas in there to rupture organs and all sorts of other things,
3 and so, the deeper the waters from which these fish are harvested,
4 the higher the probability of discard mortality, and it goes up a
5 lot.

6

7 **VICE CHAIRMAN BARBIERI:** Sue, do you have that value?

8

9 **DR. LOWERRE-BARBIERI:** Yes, I do, and so it was 980, and that's
10 thirty-eight inches, it looks like. In terms of discard mortality,
11 I completely agree with what Ryan said. We have a small sample
12 size, and we wanted to get some of those fish to survive. We
13 haven't gotten a single fish that we implanted over fifty meters
14 to survive.

15

16 I hope I'm not speaking out of place, but I do think something to
17 consider is increasing the minimum size, because, as you mentioned,
18 most of the discards are actually undersized fish. They're in
19 that shallower water, and you have lower discard mortality, and so
20 you would increase recruitment to the spawning population by doing
21 that, while still keeping it -- Just naturally, and you don't have
22 to monitor a given area, just because that size range that you
23 would bump it to -- Those fish are all in shallower water to start
24 with, and so I think that that might be something to think about
25 that might be a little bit easier fix.

26

27 **VICE CHAIRMAN BARBIERI:** Thank you for that, Sue. To Tom's
28 previous points, right, we are coming up with a lot of additional,
29 right, thoughts and recommendations, but, in reality, what's
30 currently in the regulatory amendment, and I would ask Jess to
31 highlight those, is reduce the bag limit to one fish per person
32 per day, right, and impose a vessel limit, all the vessel limits,
33 and then the commercial spawning season closure. Those are already
34 part of this regulatory amendment, and the council is just
35 requesting guidance, right, on how we felt about the effectiveness
36 of those measures.

37

38 **MR. RINDONE:** That's not to say that you guys can't say, hey, you
39 guys might think about some of these other things, because,
40 ultimately, the council will be the ones to include those measures
41 or they won't, and so I don't want you guys to feel like you're
42 muzzled or anything like that, and you're certainly not, and you
43 can propose whatever you want.

44

45 However, just, you know, with the idea that like, if you're putting
46 yourself in the council's shoes, the council is trying to get this
47 particular document moved along as quickly as possible, so that
48 any positive effect that could be gleaned out of it for the stock

1 can start to take effect as soon as possible, to aid in the
2 rebuilding of the stock, and also whatever positive impacts to
3 fishers might be able to be achieved, and so there's a couple of
4 sides to it.

5
6 **VICE CHAIRMAN BARBIERI:** So, in my opinion, unless we have some
7 additional thoughts on this, I think we've talked this one to death
8 already, and, you know, we, I guess, have converged towards a lack
9 of comfort, right, in ranking these options based on qualitative,
10 you know, assessments, gut feeling, right, of where we are, and we
11 don't have anything along this list here that we absolutely hate,
12 that we would put as a last one, or the one most likely to be like,
13 you know, effective, and I think that all the discussion that we
14 had yesterday, and that we had today, and, you know, I will be
15 looking at the verbatim minutes, if I can, and then looking at all
16 the notes, right, that Ryan is taking, and I'm going to try to put
17 something together that captures, right, all the conversation that
18 we had over the last couple of days on this topic. Okay?

19
20 So that completes Agenda Item whatever it is, VIII or IX, and we
21 are ready to move on, and this was Agenda Item XIII, and now we
22 can move on to Agenda Item XIV, which is Public Comment. Is there
23 anybody in the room or online at this moment that would like to
24 provide public comment to the committee? Hi, Mike. Are you ready?

25
26 **PUBLIC COMMENT**

27
28 **MR. DREXLER:** Good afternoon. Thank you, Mr. Chair. I'm still
29 with you today, even though I'm not there in-person, and, quickly,
30 I wanted to thank everyone, again, for the careful consideration
31 of gag. I just wanted to, you know, highlight, once more, that
32 these projections, whether they're ACL projections or, I would
33 argue, more importantly, rebuilding projections, are entirely
34 conditional on the fleets operating and discarding the way they
35 have in recent history, and we know, based on the recent actions,
36 there is no way they're going to behave like they have in recent
37 history, and, obviously, we're going to be thinking about taking
38 some additional actions here.

39
40 I just hope the SSC and council, as a way to test that assumption,
41 ideally on an annual basis, is looking at the discard behavior and
42 total mortality moving forward, so we can ensure that these ACL
43 increases are following along the fishing mortality projections we
44 assumed and the rebuilding plan remains on track, and so that's
45 the point that I wanted to make with gag.

46
47 Then, second, I really appreciated the conversation around
48 incorporating social indicators into fisheries management. I just

1 saw a recent presentation by Andrea Chan, who is with the Office
2 of Science and Technology, and I think -- I don't know if it's
3 available or not, but she's working on a NOAA technical memo on
4 the subject, and I thought that her PowerPoint was really powerful,
5 and so I just wanted to flag that for everyone, and one of the
6 recommendations made in there was including social indicators in
7 these environmental ecosystem socioeconomic profiles to support
8 decision-making.

9

10 Then I also wanted to point out a project that I was involved with,
11 which was using a large-scale health survey, the Behavioral Risk
12 Factors Surveillance System, which is an annual health survey
13 that's conducted annually across the country, and, in some cases,
14 they have different modules that you can look at, and one of those
15 is the industry and occupation module, and we used that industry
16 and occupation module to list participants of the fishing sector
17 that identify with fishing-related industries.

18

19 We looked at, you know, different demographics in health, but it
20 could easily be leveraged as an ongoing dependent time series
21 indicator, and so I'm not a social scientist, but I do understand
22 indicators, and that was my intent there, as having done the work,
23 and so I just wanted to flag it as a low-hanging fruit, to try and
24 build that information, and it's really cheap for a state to
25 implement, maybe \$20,000 a year, and the infrastructure is there,
26 and a lot of the Gulf states are already doing it, and so it's a
27 low-hanging fruit that we could leverage. Thank you.

28

29 **VICE CHAIRMAN BARBIERI:** Thank you, Mike. Any questions from the
30 committee for Mike? No questions, Mike. Thank you for providing
31 your input. We always appreciate it. Anybody else, Jess? Okay.
32 Well, this completes then our agenda. Thank you, everyone, for a
33 great meeting, a lot of engagement and participation, and I really
34 appreciate it, and I look forward to seeing everyone at the next
35 meeting.

36

37 (Whereupon, the meeting adjourned on September 28, 2023.)

38

39

40

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