

Table of Content

1		
2	Roll Call.....	3
3	Approval of Agenda.....	4
4	Approval of Minutes.....	5
5	SEDAR 80 USVI Queen Triggerfish- Adyan Rios, SEFSC Caribbean	
6	Fisheries Branch and Kyle Shertzner, SEFSC Atlantic Fisheries	
7	Branch.....	6
8	Nassau Grouper - Michelle Schärer-Umpierre.....	45
9	Research Priority Updates.....	54
10	Proposed Rule to Change the ESA Status of Pillar Coral from	
11	Threatened to Endangered - Alison Moulding.....	83
12	Questions/Comments .....	88
13	Cont. SEDAR 80 USVI Queen Triggerfish.....	95

1                                   **CARIBBEAN FISHERY MANAGEMENT COUNCIL**  
2                                   **SCIENTIFIC AND STATISTICAL COMMITTEE**  
3                                   **VIRTUAL MEETING**

4  
5                                   SEPTEBER 27, 2023  
6

7 The Caribbean Fishery Management Council's Scientific and  
8 Statistical Committee convened on Wednesday morning, September 27,  
9 2023, and was called to order at 9:15 a.m. by Chairman Vance  
10 Vicente.

11  
12                                   **Call to Order**  
13

14 **VANCE VICENTE:** Hello. Good morning, all. This is Vance Vicente.  
15 Please give us a few minutes until other participants show up.  
16 Thank you.  
17

18 **GRACIELA GARCÍA-MOLINER:** Hey. Good morning, everyone. This is  
19 Graciela. We are confronting problems with the link in the federal  
20 register, so we are resending the link to people who are requesting  
21 it. Apologies for the lateness in starting the meeting.  
22

23 **VANCE VICENTE:** Good morning, all. This is the SSC September 27th,  
24 2023, meeting which is scheduled to begin now. A little bit late,  
25 but still, we're close to 9 a. m. and should end at 5 p.m.  
26

27 So, first of all, I want to say hello to everybody, the Technical  
28 Advisory members and Chairs, all the SSC members, the Southeast  
29 Fisheries Science Center scientists, and particularly to those  
30 speakers that will entertain us with various topics. These are  
31 Adyan, Kyle, Michelle, and Alison. Before we begin the roll call,  
32 I've been asked to read out the rules for meetings, which were  
33 kindly prepared by Kiara Matias, which is the Administrative  
34 Assistant of the Caribbean Fisheries Management Council.  
35

36 So let me go through this before we go for the roll call. One,  
37 keep microphones off. If virtual, make sure you have the microphone  
38 set to mute. If in person, please set your computer's microphone  
39 to mute and ensure you have the face-to-face microphone on the red  
40 light. The green light is only for when you have a turn to speak.  
41 Second, please raise your hand to be granted a turn. You will be  
42 notified when it is your turn. Third, you must speak loudly and  
43 clearly, please. That way we can hear your testimony better. Four,  
44 the meeting is being recorded, so please do not chew gum and/or  
45 sweets in the process of it. Make sure you don't use any bad words  
46 either. Number five, it is very important to identify yourself  
47 with your name and last name for each time you speak. There will  
48 be verbatim transcriptions of the meeting and the transcriber needs

1 to identify the speakers. I will add number six, please be polite  
2 in your comments. Treat each other gently and in a very formal  
3 way. So, thank you for your attention and cooperation. So, unless  
4 there are no comments, we will begin the roll call.

5  
6 **Roll Call**

7  
8 **GRACIELA GARCÍA-MOLINER:** Graciela García-Moliner, Council Staff.

9  
10 **KIARA M. MATÍAS ROJAS:** Kiara Matías, Council Staff.

11  
12 **VANCE VICENTE:** Vance Vicente, Chairman of the Scientific and  
13 Statistical Committee.

14  
15 **CRISTINA OLÁN MARTÍNEZ:** Cristina Olán, Council Staff.

16  
17 **LIAJAY RIVERA GARCÍA:** Buenos días. Liajay Rivera, Council Staff.

18  
19 **NELSON CRESPO:** Good morning, everyone. Nelson Crespo, DAP Chair,  
20 Puerto Rico.

21  
22 **JASON COPE:** Hi, everyone. Jason Cope, member of the SSC.

23  
24 **RICHARD APPELDOORN:** Rich Appeldoorn, SSC.

25  
26 **JULIAN MAGRAS:** Good morning, everyone. Julian Magras, DAP Chair,  
27 Saint Thomas/Saint John.

28  
29 **ERIK H. WILLIAMS:** Good morning. Erik Williams, Southeast Fisheries  
30 Science Center.

31  
32 **TARSILA SEARA:** Good morning, everyone. Tarsila Seara, SSC member.

33  
34 **MAGGIE E. MOTIANI:** Good morning. Maggie Motiani, U.S.V.I. Division  
35 of Fish and Wildlife.

36  
37 **KEVIN MCCARTHY:** Good morning. Kevin McCarthy, Southeast Fisheries  
38 Science Center.

39  
40 **ADYAN RÍOS:** Good morning, everyone. Adyan Ríos, Southeast Science  
41 Center.

42  
43 **KATHERINE M. ZAMBONI:** This is Kate Zamboni from NOAA's Office of  
44 General Counsel.

45  
46 **MICHELLE SCHÄRER-UMPIERRE:** Michelle Schärer, SSC.

47  
48 **WILSON SANTIAGO:** Wilson Santiago, Puerto Rico Fisheries Liaison.

1  
2 **WALTER KEITHLY:** Walter Keithly, SSC Member  
3  
4 **RACHEL BANTON:** Rachel Banton, Southeast Fisher Science Center.  
5  
6 **CARLOS FARCHETTE:** Carlos Farchette, Council Chair.  
7  
8 **VANESSA RAMÍREZ:** Vanessa Ramirez, Vice Chair.  
9  
10 **KYLE SHERTZER:** Kyle Shertzter, Southeast Fisheries Science Center.  
11  
12 **DANIELA LEE:** Good morning. Daniela Lee, U.S.V.I. Division of Fish  
13 and Wildlife.  
14  
15 **GRACIELA GARCÍA-MOLINER:** Okay. Mr. Chair, if I may, this is  
16 Graciela. Also, you have online-- well, first, excused from the  
17 SSC you have Todd Gedamke, J.J. Cruz Motta, and Reni García will  
18 be joining us a little bit later today. Other people joining the  
19 meeting are Virginia Shervette, Jesus Rivera, and I think I saw  
20 María López also sign in. And I think you have Julie Neer, Rafik  
21 Orhun from the Science Center, David Behringer, sorry if I  
22 misspelled your name. And I have Kimberly, or I saw her name  
23 earlier, I think, also from the Science Center, correct, Kevin?  
24  
25 **KEVIN MCCARTHY:** Yeah, that's probably Kim Johnson, from the  
26 Science Center.  
27  
28 **GRACIELA GARCÍA-MOLINER:** So, Mr. Chair, that's--  
29  
30 **CRISTINA OLÁN MARTÍNEZ:** And also-- Excuse me, Mr. Chair, and  
31 Graciela. It's Cristina. Also, we have Daniel Oliv.  
32  
33 **GRACIELA GARCÍA-MOLINER:** Okay. So you do have quorum for the SSC.

#### 34 35 **Approval of Agenda** 36

37 **VANCE VICENTE:** Well, thank you very much Graciela. Again, welcome  
38 to this SSC September 27, 2023, meeting. Our next item is the  
39 approval of agenda. So, if you allow me, let me read the various  
40 things to be included in today's meeting. Between 9:30 and 12 p.m.  
41 we will have the SEDAR 80 U.S.V.I. Queen Triggerfish, Saint Thomas,  
42 Saint John, Saint Croix, which will be presented by Adyan Ríos  
43 from the Southeast Fisheries Science Center, Caribbean Fisheries  
44 Branch, and Kyle Shertzter, Southeast Fisheries Science Center,  
45 Atlantic Fisheries Branch.

46  
47 I made a little note here that we had extensive discussion of this  
48 subject which were executed during the May 1 to May 5, 2023, joint

1 meeting. That was the SSC and EBFM TAP meeting. To make this  
2 September 27, 2023, more efficiently, I propose that the  
3 presentation by Adyan Ríos and Kyle Shertzer should be cut a little  
4 bit. I think there is ample time for them to present their points  
5 between 9:30a.m. and 12 p.m. Then from 12 to 12:30 p.m. we have  
6 the recommendations of the SSC to the Caribbean Fisheries  
7 Management Council on the aforementioned presentation, SEDAR 80,  
8 based on the aforementioned presentation. As I said before, ample  
9 time was dedicated to the Queen Triggerfish U.S.V.I. situation  
10 during the May 1-5, 2023, joint meeting. And I believe that we can  
11 conclude this matter in half an hour after the presentation.

12  
13 Then there will be a lunch break between 12:30 and 1:30 p.m. Between  
14 1:30 p.m. and 3:00 p.m. the SSC and the EPFM TAP research priority  
15 updates will be presented, discussed and synthesized. Between 3:00  
16 and 5:00 p.m. about relating to other business we will have ESA  
17 listed species implications on fishery management in the U.S.  
18 Caribbean. For that we will have Michelle Schärer-Umpierre giving  
19 us a summary regarding the *Epinephelus striatus*, the home range,  
20 space use, and vertical distribution of this nassau grouper during  
21 non-spawning times in Western Puerto Rico and other information  
22 that she might find pertinent to discuss in relation to this ESA-  
23 listed threatened listed species and was very important commercial  
24 fish species.

25  
26 Then we will have Alison Moulding presenting to us the proposed  
27 rule to change the ESA status of Pillar Coral from threatened to  
28 endanger. And then we will discuss when, and what to include in  
29 the next SSC meeting. I have included additional information. I  
30 mean, Graciela sent to all the SSC members additional information  
31 for reading before this meeting. I don't know whether you had time  
32 to review it, but it will make this meeting more productive and  
33 more down to the point.

34  
35 So, this is the agenda. We need to approve it. So, is there a  
36 motion to approve the agenda or any comments regarding the agenda?

37  
38 **JASON COPE:** I move to approve the agenda.

39  
40 **RICHARD APPELDOORN:** Second.

41  
42 **Approval of Minutes**

43  
44 **VANCE VICENTE:** So, we need a vote regarding the approval of the  
45 agenda. Are there any objections? Any abstentions? Okay, well,  
46 thank you very much. We have the agenda approved. Thanks all.  
47 Approved.

48

1 I don't know whether you all had time to go over the minutes, the  
2 verbatims of the May 1<sup>st</sup> to May 5<sup>th</sup> 2023 SSC EBFM TAP meetings. I  
3 did go over it. It's very long. It takes a lot of time, several  
4 hours, of course. I myself, I don't have any objections. I there's  
5 a minor spelling mistakes and mixing prayer with praise and things  
6 like that, which are minor, but I see that the verbatims have a  
7 high fidelity with what we presented and discussed during that  
8 long five-day meeting. So, we need a motion for the approval of  
9 the minutes of the SSC EBFM TAP meeting of May 1 to May 5 of 2023.

10  
11 So, is there a motion to approve the minutes as written or are  
12 there any comments regarding the minutes?  
13

14 **GRACIELA GARCÍA-MOLINER:** Mr. Chair, if I may, this is Graciela.  
15 if anyone has any edits, usually we receive comments from the SSC  
16 members or the public and you can provide those to us. But if there  
17 is anything major that needs to be changed, this is the time to do  
18 it.  
19

20 **VANCE VICENTE:** Okay, is there a motion to approve the minutes as  
21 provided by the Council of the SSC EBFM TAP meeting of May 1 to  
22 May 5, 2023?  
23

24 **RICHARD APPELDOORN:** Motion to approve.  
25

26 **JASON COPE:** I second.  
27

28 **VANCE VICENTE:** Any abstentions? Any objections?  
29

30 Well, I don't see any hands coming up, so the approval of the  
31 minutes of the SSC EBFM TAP meeting of May 1<sup>st</sup> to May 5<sup>th</sup>, 2023 have  
32 been approved.  
33

34 So, if there aren't any comments regarding the above issues, then  
35 we will go to thing one, which is the presentation of SEDAR 80  
36 U.S.V.I. Queen Triggerfish. Saint Thomas, Saint John, Saint Croix.  
37 By Adyan Ríos. So, Adyan, it's all yours.  
38

39 **SEDAR 80 USVI Queen Triggerfish– Adyan Rios, SEFSC Caribbean**  
40 **Fisheries Branch and Kyle Shertzer, SEFSC Atlantic Fisheries**  
41 **Branch**  
42

43 **ADYAN RÍOS:** Thank you, Vance. do I need to re-log in? I have  
44 attendee screen sharing is disabled.  
45

46 **LIAJAY RIVERA GARCÍA:** Hi, Adyan. This is Liajay for the record.  
47 You should be able to share your screen now.  
48

1 **ADYAN RÍOS:** Yep. Thank you so much. Good morning, everyone. You  
2 should be seeing the cover slide.

3  
4 **VANCE VICENTE:** Yes.

5  
6 **ADYAN RÍOS:** Awesome. So, this morning we'll be presenting the  
7 SEDAR 80 Caribbean Queen Triggerfish Saint Thomas/Saint John  
8 modeling process. Joining me is Kyle Shertzer from the Atlantic  
9 Fisheries Branch.

10  
11 Let's get going. We'll start off with an overview of the data and  
12 the assessment goals. So, for Saint Thomas and Saint John we have  
13 fishery dependent data, fishery independent data and cooperative  
14 life history studies. For fishery dependent data, we have  
15 commercial trap removals or landings, the effort associated with  
16 that, and the length composition observed in the Trip Interview  
17 Program. For fishery independent data, we have an index of  
18 abundance and the length composition from diver surveys called the  
19 RVC, the Reef Visual Census. And then, we also have the life  
20 history studies that inform the growth, maturity, and mortality.

21  
22 Jumping into the goal here that's taken from the terms of  
23 reference, which is that the SEDAR 80 Caribbean queen triggerfish  
24 assessment goal is to develop a stock assessment model using data  
25 limited approaches similar to those used and approved for SEDAR 46  
26 or SEDAR 57. And in this case, comparing to SEDAR 57, we also have  
27 an index of abundance. So, that's really exciting because catch  
28 limits are currently based on just the landings time series. But  
29 now we're able to complement that landings time series and gain  
30 more context of what's happening to the population using length  
31 composition data and using an index that informs the density and  
32 the abundance that is seen in the water. And we can use that to  
33 inform our population size structure and our population abundance  
34 over time.

35  
36 Next, we'll review some of the notes from our last meeting. These  
37 were the individual topics that we discussed and came up with a  
38 conversation that led to like a game plan for how we address these.  
39 So, at the May 2023 SSC meeting, we reviewed and discussed the SSC  
40 recommendations that were provided previously in December. And  
41 that involved these eight points which I'll read through first and  
42 then we can discuss slightly more as we go.

43  
44 The first one is exploring the equilibrium catch assumptions. So  
45 the initial F. And we were also asked to explore the historical  
46 data for the potential to use that to understand, even though it  
47 wasn't species specific, what can we learn from the historical  
48 landings? Another topic that we discussed was the dome-shaped

1 selectivity, variability and growth, a composite length  
2 composition, how we weigh the indices, how we can reweigh the  
3 different components of data used in the model. We were tasked  
4 with corroborating the fishery independent index, and we were  
5 looking into parameter stability for things like steepness.

6  
7 And so, now that I've listed those, I'll go through them one more  
8 time and then before we move on to how these topics were  
9 implemented. So, the equilibrium catch assumptions, our model  
10 starts in the year 2000 and the decision and the model inputs that  
11 guide the initial F and allowing the model to estimate the initial  
12 F need to be explored and understood as to whether they're  
13 estimable. We can also provide the model with an informed estimate  
14 and so that's what we've been able to do by looking into the  
15 historical landings.

16  
17 Last time, we also, and we'll look at these again on the next  
18 slide, but I just wanted to introduce them and then really dive  
19 into them. We also talked about dome-shaped selectivity, and we  
20 have applied that into the model, and we'll come back to that as  
21 well, but this relates to the discarding and that plate size  
22 selection for the commercial fishery in particular. And we had  
23 really great input from the participants at the last meeting to  
24 provide us with the information with which to make that change in  
25 the model structure.

26  
27 We talked about the variability and growth and in particularly  
28 exploring the CV, the CV on the growth equation. And for composite  
29 length composition, this refers to the commercial length  
30 composition data, which we talked about how that was reflective of  
31 the sizes that we see in the catch through the Trip Interview  
32 Program or reflective of the market demands, like the size of the  
33 fish. And so that leads us to understand that we can definitely  
34 use this to inform the selectivity of the fleet, but that data is  
35 less informative for really capturing age classes coming through  
36 because it is so targeted to those specific sizes that are desired  
37 for markets.

38  
39 We looked into weight, how the indices were weighed. We also  
40 discussed in particular the commercial index. Where the commercial  
41 index, similar to the commercial length composition, reflects the  
42 market driven dynamics. So, the catch per trip is more reflective  
43 of market driven dynamics, more so than capturing changes in  
44 abundance of the population. So, with that we also made the  
45 recommendation to consider removing the commercial index, which  
46 allows us to use the RVC index as our index of abundance.

47  
48 Model input reweighting. There are various ways to do this and

1 we'll come back to this at the end of the presentation. There are  
2 three different ways. Basically, where we're recommending that we  
3 use the one that's kind of being recommended across assessments in  
4 the field, which is the [inaudible].

5  
6 Next, we have the Fishery Independent Index Corroboration. So, we  
7 did review the RVC index and sit down and talk about what is being  
8 observed in the last year, what is being observed in more recent  
9 years and also revisit how that index was prepared. And so, we  
10 have corroborated that to be accurate as documented. And there's,  
11 additionally, a paper coming out soon about additional surveys  
12 that they have been doing.

13  
14 And lastly, we've been exploring the different estimability of  
15 parameters. And so that's been an important process in model  
16 development. And we'll talk about what parameters have been fixed  
17 and what parameters we continue to explore for their estimability  
18 by doing profiles and sensitivities.

19  
20 Any questions before we move on to the next slide? Okay.

21  
22 So, here are some of the important decisions laid out that kind of  
23 are in response to those conversations from our last meeting. The  
24 composite length catch for the commercial, the pooling of those  
25 commercial length compositions across years that was done in the  
26 model because of the market driven catch size. We also set  
27 steepness equal to 1. So, that is now a fixed parameter moving  
28 forward. And that's because of the difficulty.

29  
30 This is a notoriously difficult parameter to estimate in a data  
31 moderate, even sometimes data rich models. And so in order to kind  
32 of reach a stable model and look at the other parameters this is  
33 a step that we've taken and it is related to where our recruitment  
34 comes from, whether recruitment is completely locally driven or  
35 externally driven. And this assumption, this setting steepness to  
36 one, this model dynamic, takes the interpretation that recruitment  
37 is externally driven.

38  
39 Next, we removed the trap index due to the market driven catch,  
40 and we retained the RVC index. But after looking into those, that's  
41 how we recommend moving forward based on our conversation last  
42 time. And we also switched from a logistic selectivity for the  
43 commercial fishery to a dome-shaped selectivity to reflect the  
44 discarding of large individuals in the fleet and the targeting of  
45 specific size fish.

46  
47 And then lastly, we, we also looked into the historical information  
48 before 2000 to guide the initial decisions and the initial

1 information that the model starts with, when we start the model in  
2 the year 2000. And we'll dive into a few of these in a little bit  
3 more detail and particular the dome-shape selectivity and in  
4 particular, the initial F.

5  
6 But before we move on into those last 2 points, I'll stop here for  
7 a moment just to see if there are any questions. Or comments about  
8 these steps that we've taken to stabilize the model and continue  
9 to explore parameter estimability. Okay.

10  
11 **VANCE VICENTE:** Are there any questions at this moment for Adyan?

12  
13 **MICHELLE SCHÄRER-UMPIERRE:** Hi, this is Michelle, I have a quick  
14 question. Is there any other commercial catch index other than  
15 traps for this fleet?

16  
17 **ADYAN RÍOS:** Saint Thomas is almost like 90, 90ish or 90 up top  
18 there with the landings of queen triggerfish coming from the trap  
19 fishery. So, for this island platform, the only fleet in the model  
20 is trap, and then the only index that was explored was also trap.

21  
22 **VANCE VICENTE:** Richard.

23  
24 **RICHARD APPELDOORN:** Yeah, thanks. Two questions. First, you're  
25 setting statements equal to one, so you're basically saying that  
26 recruitment's independent of stock size. Is that correct?

27  
28 **ADYAN RÍOS:** Yes, and this is part of the modeling process. At the  
29 end, when we talk about sensitivities and understanding the  
30 implications of these kind of modeling decisions, that's something  
31 that can be explored to understand the implications of that  
32 decision.

33  
34 **RICHARD APPELDOORN:** Okay, I'm just noting that, you know, queen  
35 trigger is a nest builder. It's not a highly fecund species  
36 relative to broadcast spawners. So, there may be some questioning  
37 of that assumption at some point. We'll see.

38  
39 And then I had a question about the trap index. I understand why,  
40 from day to day or week to week that a trap index is going to  
41 fluctuate relative to demand, but would that really be the case  
42 over the course of a year where demand would be fluctuating around  
43 some level and the catch, relative to that, would then be  
44 indicative of-- In other words, fishermen would be setting their  
45 traps relative to their expectations of demand. Just wondering  
46 whether that was an issue or not. I don't really have a problem  
47 with you taking the index out, but I was kind of curious about  
48 that.

1  
2 **ADYAN RÍOS:** Those are great points and I think that the  
3 socioeconomics of the dynamics of the fishery are an important  
4 kind of element to explore more, but for the current kind of level  
5 at which the index was developed, at just kind of like catch per  
6 number of traps fish, we do have the input of how many fish are  
7 thrown back, so we're not-- What we're seeing in this index is  
8 truly what they think they can sell. So, I think we heard back  
9 that they will throw back a lot of fish. And so, by only having  
10 our landings per traps I think it would require further kind of  
11 interpretation to get at understanding how we can kind of better  
12 understand how to reflect abundance through that kind of human  
13 dynamic layer that gets added to the data.

14  
15 **RICHARD APPELDOORN:** Okay, so that actually clarifies that a lot.

16  
17 **ADYAN RÍOS:** So, on the right of this slide is just an overview of  
18 what these decisions are reflected in the model as. So, we have  
19 commercial landings. Those are annual. And then, we have the  
20 composite length composition. The composite length composition  
21 allows the model to still inform selectivity and so that's really  
22 an important component. We'll look at the selectivity, I think, in  
23 a couple of slides.

24  
25 For the RVC index, the reef visual census, we have an index, and  
26 we have the observed length composition by year. We also have a  
27 fixed life history parameters in the model, such as growth, natural  
28 mortality, maturity and steepness. And just to comment, at the end  
29 of the presentation, we will talk about important decisions like  
30 natural mortality, it's a very common parameter over which to  
31 explore a profile and understand sensitivity of the model results  
32 to the natural mortality used in the model.

33  
34 And then, here we have the estimated parameters. There is one for  
35 estimating the initial  $F$  of the model. One parameter for estimating  
36 the unfisher recruitment, and various parameters that reflect the  
37 selectivity. So, the dome shape selectivity. And we'll look at a  
38 dome shape selectivity later. But if you imagine the dome, you've  
39 got a parameter that tells you about the increase, where that  
40 increase happens, how high that dome goes, when that dome decreases  
41 and when it flattens out. So, those are the parameters that are  
42 part of the dome-shape selectivity and we'll talk about those  
43 later.

44  
45 So first, let's talk a little bit more about the initial  $F$   
46 exploration by looking at the historical data that are available.  
47 Here we have, on the right, these are total landings and in the  
48 pink--

1 Let me zoom in here real quick as well. Oops. Those are my tech  
2 features. Where's the zoom? I guess I don't have zoom, but I'll go  
3 ahead and turn on the laser pointer.

4  
5 Okay, so in the pink here, we have the data for all species caught.  
6 So, all species caught and documented into the ALS system for Saint  
7 Thomas/Saint John and Saint Croix. So, this is our time series of  
8 information for all species caught. What we're going to work  
9 towards is potentially-- well, implementing a ratio, understanding  
10 what percentage of all species caught is queen triggerfish and how  
11 can we use that to inform different time series and historical  
12 time series alternatives that can help us parameterize the initial  
13 catch that we have in the year 2000.

14  
15 The year 2000 is where species specific data come in. And so, we'll  
16 dive into that a little bit further. But we made a simple back  
17 calculation by just picking an initial year. We picked various  
18 initial years, and we picked two points at which this time series  
19 of total landings, for each island platform, would tell these back  
20 calculations, these extrapolations. So, this kind of tells a story  
21 of a very long time series with this slope, a higher slope towards  
22 the more modern time period where the data are input as species  
23 groups, and then species specific after 2000.

24  
25 And then, we also looked at these alternatives, which provide a  
26 broad range of fishery initiation. So how did this entire fishery  
27 initiate slowly over a long time or quickly over a short time or  
28 somewhere between? So, since we have total landings, we can now  
29 look at what percentage of total landings is our species of  
30 interest, is our species being assessed. And so here we have a  
31 stacked bar plot of annual pounds of the species of interest. And  
32 we also have an overlay line of the total catch. This shows us  
33 that queen triggerfish in green, triggerfish is in blue, there's  
34 very minor, almost imperceptible recordings of triggerfish ocean,  
35 so we're able to understand and interpret this to understand what  
36 percentage of total landings we can attribute to triggerfish.

37  
38 And across all of these years we see that it's 12% with a pretty  
39 consistently 12%. There's a low CV on that value for Saint Thomas  
40 and Saint John. For Saint Croix it was 3% with a slightly higher  
41 variability on that average value over all of these years, that  
42 geometric mean value, over these years.

43  
44 So, we've taken this mean and applied that to our historical time  
45 series of total catch to arrive at six alternative time series to  
46 inform historical catch and F in 2000. So, we're able to run the  
47 models over these entire time series with these presumed catches  
48 and use that to help understand what is happening at the start of

1 the year 2000. We'll look at some of those results in a little  
2 more depth later, but on this slide, we just wanted to really talk  
3 about the exploration and the research that went into this approach  
4 of the back calculation for a specific species group. And so here  
5 we're looking at the result applied to trigger fish.

6  
7 So, we will later look at some of the model results of these  
8 various runs, but before I move on to that, any questions about  
9 the back calculation extrapolation.

10  
11 Okay. Next, we also wanted to touch on.

12  
13 **VANCE VICENTE:** Sorry, sorry. Jason has a question for you.

14  
15 **JASON COPE:** Just a question you're showing here, essentially,  
16 just mostly for clarification, the ramping approach to kind of  
17 getting to the current year 2000, right? As opposed to putting in  
18 an equilibrium catch just before 2000, which is kind of this long-  
19 term assumption that some removal has been going on for just  
20 however long. They have similarities, but they also have  
21 differences. Did you consider that equilibrium catch thing, or did  
22 you prefer the ramping, which is maybe a bit more transparent as  
23 to what you exactly are assuming?

24  
25 **ADYAN RÍOS:** Thank you, Jason. I'm going to go back a couple slides  
26 to-- Here in particular. So, when we are estimating initial  $F$ , as  
27 well as a selectivity parameters and  $R_0$ , we did try the approach  
28 of an ensemble across different initial equilibriums and we were  
29 seeing a very unstable model where you're not seeing a consistent  
30 pattern as you're changing, as you're ramping up your initial  $F$   
31 and looking at your  $F$  over a range of  $S$ . So, that showed us that  
32 the model was having a really difficult time interpreting across  
33 the selectivity parameters and the  $R_0$ .

34  
35 And so, also allowing it to estimate was becoming an issue, so  
36 that brought us to the exploration of this historical time series  
37 approach, and we'll talk about it too in the part about how we  
38 move forward, as to how we use this information. We can use it as  
39 information, like as a prior, or it can be fixed depending on how  
40 the model is able to perform using that information as input.

41  
42 And, you know, a lot of the runs were kind of suggesting that the  
43 fishery was like above virgin. Above like, very, very, very  
44 lightly, lightly, lightly exploited, which it is an unusual model  
45 result. And so, to further explore and understand how this fishery-  
46 - to help the model along and find a space that is more of a  
47 hypothesis and in line with our understanding of how important  
48 this fishery has been for so many years, this approach is kind of

1 the suggestion that we'll dive into.  
2  
3 **JASON COPE:** Great, thank you. Yeah, it sounds like there's some  
4 weird behavior when adding that additional parameter of estimation  
5 of F in the equilibrium part. Which makes sense why you're going  
6 with this sort of explicit ramping approach. So, thank you for  
7 that.  
8  
9 Outside of this meeting or something, we should definitely talk  
10 and see why that weird behavior is going on, because that's too  
11 bad. We should try to fix these models, so they don't do such a  
12 thing. But you made a great clear explanation why you're doing  
13 what you're doing. So, thank you.  
14  
15 **ADYAN RÍOS:** Thank you. So next we want to talk about the dome-  
16 shaped selectivity and just visualize here with this graphic what  
17 this means for the model, because we talked about initially using  
18 a logistic selectivity, which in this plot is reflected in the red  
19 and reflects that after a certain size or selectivity increases,  
20 and then after a certain size all fish are selected. But we know  
21 from conversations, as well as from what we see in the data, that  
22 larger fish are returned either returned or unavailable to the  
23 gear. And so, the maximum size that we see-- I'm sorry, these are  
24 backwards. The maximum size that we see in the TIP data from the  
25 trap fishery is 46 centimeters and the maximum size that we see in  
26 the RVC data is 66 centimeters. So, that is another justification  
27 that the largest individuals are out there, and they see them when  
28 they're diving in the water, but we do not see them landings  
29 because they are either not available to the gear or they are  
30 either returned. And that is in line with you know, the  
31 conversations that we've had about the plate size selectivity as  
32 well.  
33  
34 I'll fix that before I share the presentation for the via email.  
35  
36 **MICHELLE SCHÄRER-UMPIERRE:** Adyan, are these all fork lengths?  
37  
38 **ADYAN RÍOS:** Yes.  
39  
40 **MICHELLE SCHÄRER-UMPIERRE:** Thank you.  
41  
42 **ADYAN RÍOS:** Now we'll move on to some of the new decisions and  
43 conversations that we would like to have today. We'll continue  
44 talking about the initial F and the historical catch series  
45 alternatives. We will also talk little bit more about the  
46 commercial selectivity, as well as the RVC selectivity.  
47  
48 Okay. So, the initial F informed by six historical catch series

1 alternatives. So, here we have the queen triggerfish time series,  
2 the alternative historical time series and our model starts in  
3 2000. So, we wanted to understand what effect these different back  
4 calculations have by putting them in the model, by putting these  
5 landings time series in the model.

6  
7 And this table shows us the years over which that backcalculation,  
8 the years over which the extrapolation of these slopes were  
9 conducted. And so, those years are listed here, as well as some of  
10 the model results, including the Virgin SSB and the F in the year  
11 2000. And there is a lot of similarities. These results are very  
12 similar, kind of showing us that no matter what we assume before  
13 these years, these early years where we don't have commercial  
14 fishery data, it's not the results of our understanding from this  
15 model in the year 2000, is very similar. With a high, a relatively  
16 high F in the year 2000, associated with one of the near the peak  
17 of landings for this fishery.

18  
19 Okay. And we also want to—

20  
21 **VANCE VICENTE:** I'm sorry, Erik Williams has a raised hand.

22  
23 **ERIK H. WILLIAMS:** So I guess there'll be more details coming, but  
24 I'm trying to understand why-- I mean, it makes sense to me that  
25 none of these different scenarios are resulting in very different  
26 F's because you're starting your model at, essentially, the peak  
27 year, which is probably the worst place to start your model,  
28 because really you don't know is that peak is an overfishing point,  
29 an overexploitation point, or an underexploitation point. You have  
30 no idea. The ramping up doesn't tell you that. What tells you that  
31 is really what's going on with the data after 2000 sort of the  
32 response rate of the index and the catches.

33  
34 And so this is sort of a-- this doesn't really help with deciding  
35 initial F. Really, where estimates of initial F, in my mind, are  
36 going to come from, is that relationship between the catch and  
37 index in the years in which you have those overlapping? So anyways,  
38 just my thoughts so far, but I want to see more of what you're  
39 going to present and hopefully it'll become a little more crystal  
40 in my mind, what's exactly going on here?

41  
42 **ADYAN RÍOS:** So, we do have some options for consideration here at  
43 the bottom related to this information. Without this information  
44 to inform, like, where the model starts, we've seen kind of an  
45 unstable dynamics by just trying to estimate it when we start the  
46 model in the year 2000. So, one recommendation to move forward is  
47 to use the midpoint from this analysis across all of the runs as  
48 a prior, and then another consideration is to use it as a fixed

1 value, but also another alternative is to use the full range to  
2 evaluate uncertainty. So, to treat this as a range over which we  
3 consider the potential being associated with the initial F. Jason?  
4

5 **JASON COPE:** Yeah, thank you. I just thinking through this, a lot  
6 of focus on the initial F, but you've laid out alternative  
7 hypotheses for, they're really rough, but alternative sort of catch  
8 histories, all of which are going to have, they're all going to  
9 have different presumptions about what the stock structure is  
10 coming in, in the year 2000, possibly. I guess for a table like  
11 this, what could also be useful to see, is what is the presumed  
12 depletion value in the year 2000? I think what's hidden with the  
13 F is that those might fluctuate a little bit just depending on  
14 kind of how much the population has pushed down and therefore the  
15 F in that year could be higher because it's been reduced a little  
16 bit more.

17  
18 There's a few more dimensions here that might be helpful to really,  
19 understand the F, but I'm curious, why not just presume-- instead  
20 of fixing an initial F, and Erik's, I agree with him, there's,  
21 there's a lot of hidden things when you kind of put in an initial  
22 F that you'd like to understand better. Why not just propose, and  
23 whether you do this in an ensemble way or just pick a reference  
24 and then do some uncertainty around it, pick a proposed ramping of  
25 catches, that seems most reasonable, and then do uncertainty around  
26 different proposed alternative catch histories to let that model  
27 get to a point. Because the underlying age and length structures  
28 could be very different, depending on how quickly you get to  
29 something, possibly, and so understanding that starting initial  
30 point in 2000 would be best served, I think, not putting in an F--  
31

32 And this is not typical, right? So, I don't think we have a really  
33 hard, this is the way to do it. So, I don't want to come across  
34 as, there's only one way to do this. I don't know, I kind of feel  
35 like the transparency and having a catch ramping up instead of  
36 fixing an F, which I feel like that's what you are kind of getting  
37 at, might be a better, easier approach. The model should have no  
38 problem converging and dealing with that proposed catch history.  
39

40 So sorry, I hope that's not just a jumble of words. I hope there  
41 was some worth out of that. I'm curious what you think about just  
42 using these alternative catch histories, instead of just using  
43 them to get an F, by which I think you're saying you would fix and  
44 then move forward in the model that way.

45  
46 **ADYAN RÍOS:** Kyle, do you want to respond first?  
47

48 **KYLE SHERTZER:** Sure. So, the reason that we started exploring

1 this was because of the instability that we saw with using the  
2 assumed catch in the starting year. And that had to do with the  
3 uncertainty in the scale of the population. So, what this buys us  
4 by taking it back to virgin is that we can pin down the scale that  
5 virgin SSB in the population, and then that's why it helps us with  
6 the with the initial or the F in 2000, and why we see such little  
7 variability there.

8  
9 And so that that was sort of the rationale for this. And another  
10 aspect of this in terms of the age structure by the time we get to  
11 year 2000 is that the ramp up is really only up until about 1975  
12 and by starting in 2000, we still have 25 years of catch history.  
13 And so pretty much all the fish that are alive in 1975 are now  
14 dead, and we have a completely new age structure in 2000 that's  
15 determined by that catch history between 1975 and 2000.

16  
17 So, Jason, your idea that you suggested is something we've talked  
18 about and considered. We could just take the catch history back  
19 and really achieve the same thing by starting with the initial F  
20 in 2000. I think they're effectively the same. They give us the  
21 same answer and so that is certainly an alternative we could do if  
22 that's something that the SSC prefers for the transparency. The  
23 reason we didn't do that is because of achieving the same  
24 trajectories, estimated trajectories, but with a lot more  
25 parameters that need to be estimated. Thank you.

26  
27 **VANCE VICENTE:** Erik, please.

28  
29 **ERIK H. WILLIAMS:** Yeah, thank you. So, I agree with what Kyle  
30 just said. I'm not even sure what the value is in taking the time  
31 series back before 1975 because, as Kyle pointed out, most of those  
32 fish we've already gone through a full age structure of fish from  
33 1975 by the time we start the model in 2000. The crux of what we're  
34 trying to get here is, the fishery clearly ramped up, reached a  
35 peak around 2000 and then declined.

36  
37 The question is, how high did that peak get in terms of population  
38 removals, percentage of population removals, or in terms of how  
39 much of the biomass it removed, whatever you want to think. But in  
40 terms of what is ultimately the stock status in 2000. That  
41 information you're not going to get from landings alone. That  
42 doesn't tell you anything. You really need to, you're going to  
43 have to develop that production function, which is the relationship  
44 between the rate of decline of the index, to the amount of landings  
45 and the rate of the landings removals. That's what tells you the  
46 sort of population response.

47  
48 And whether that response is shallow such as so that the index

1 doesn't respond to removals, that would tell you that it's lightly  
2 exploited. If it's a heavy response, that tells you it's a strong  
3 response, which indicates that the fishery is removing significant  
4 impacts or significant amounts to the population and causing it to  
5 respond. That's the crux of the information. I just think taking  
6 this back to 1900 or 1940s or whatever, doesn't tell you anything.  
7 It's really, all you need to know is that there was a steady ramp  
8 up leading up to 2000. And you've demonstrated that here.

9  
10 The question is, the crux of it is, that peak, what does that peak  
11 represent? Is it a condition where the stock was fully exploited,  
12 overexploited, or underexploited? And that information is not  
13 going to just come from the historical landings. That's got to  
14 come from sort of the population dynamic response that comes  
15 afterwards.

16  
17 **KYLE SHERTZER:** Just a quick response to that. It's not necessarily  
18 the trajectory or the start date. It's taking it all the way back  
19 to Virgin that allows estimation of the scale of the population,  
20 so that we can put into context what does 500,000 pounds of  
21 landings mean relative to the potential.

22  
23 **ERIK H. WILLIAMS:** Right. But that potential is defined by that  
24 production response. In other words, you don't know what that  
25 number is until you understand the landings and index response. As  
26 I said, it's shallow. If it's shallow, it would suggest that that  
27 virgin biomass is something low. If it's a very steep response, it  
28 would suggest it's very high. Yeah. But again, just the landings  
29 by themselves doesn't tell you that.

30  
31 **ADYAN RÍOS:** These models are run through 2020 and this table could  
32 be expanded with additional information. But those dynamics  
33 related to the indices and my composition for the more recent years  
34 are incorporated in these fits. So that comes to mind as like that  
35 is part of the story that leads to these runs and these initial  
36 Fs.

37  
38 **VANCE VICENTE:** Kyle Shertzer, please.

39  
40 **KYLE SHERTZER:** Just another quick response to Erik's comment. One  
41 option here is that if in the end, the committee doesn't believe  
42 that we're able to estimate a stock status, then that's something  
43 that could be left unknown. We could still estimate a fishery  
44 status, you know, the fishing rate relative to some reference  
45 point. And if we are unable to estimate the production function  
46 then stock status could be left unknown.

47  
48 **ADYAN RÍOS:** So, I just wanted to stay here for a little bit longer

1 just to kind of arrive at kind of a recommendation for moving  
2 forward.

3  
4 **GRACIELA GARCÍA-MOLINER:** Did you see the comment from Jason in  
5 the chat?

6  
7 **ADYAN RÍOS:** No. Not yet. Thank you.

8  
9 **ADYAN RÍOS:** "Is there a profile over the virgin recruitment  
10 available?" A profile over which run? Profiles over starting the  
11 model in 2000 were unstable. So, too much pull or unstable  
12 responses across the selectivities and the R0 and the initial F  
13 and so this approach allows us to pin down one of those loose ends  
14 and then allows us to explore the sensitivity and the R0 in that  
15 approach.

16  
17 I think that's where we're headed, a recommendation towards being  
18 able to pin down an initial F, explore our R0 and explore our  
19 sensitivity. So, tune that aspect of the model. Then free,  
20 potentially, a profile of the initial F as well. Or provide that  
21 that initial F as just a prior that the model would still  
22 potentially be able to estimate. But there's a lot of correlation  
23 and pulls towards different unstable model runs starting in the  
24 year 2000 with estimating an initial F.

25  
26 **VANCE VICENTE:** Yes, Jason.

27  
28 **JASON COPE:** Adyan, thank you for that. Obviously, we're kind of  
29 spinning around the fact that there is a lot of uncertainty and  
30 the scale of the population, especially in that initial scale.  
31 We've said that you can kind of get at this in a variety of  
32 different ways, all of which are kind of doing similar things,  
33 that makes-- So we understand where the problem lies, or the  
34 challenge lies. Right?

35  
36 I guess the suggestion with R0 is, what I'm hearing from you is  
37 that if you do it from the model that starts in 2000, you get  
38 unstable estimates, or estimates of the few parameters you are  
39 estimating that don't make sense and you get maybe unconverged  
40 models, if I'm hearing that right.

41  
42 One suggestion, because if I remember this right, this model is  
43 only estimating R0 and selectivities, if that's correct. If that  
44 is correct, I can't imagine the selectivities would be changing in  
45 their estimation all that much, or should they? Right? That should  
46 kind of be fairly well determined. This is not a time varying  
47 selectivity issue. So, if you fit a model where you got reasonable  
48 selectivities, and fixed those in order to do the profile, you

1 should be able to get a profile or zero profile-- and Erik, I saw  
2 your comment too. --in an F, right?  
3  
4 All of these things are getting at the exact same thing. If you  
5 profile over initial F profile over R0, it's all telling you that  
6 what Erik was talking about, right? What is the rate of removal?  
7 The rate of removal will, because of the way that this model is  
8 set up and it has catches in it, will scale the population  
9 appropriately. So, if we do it over R0 or initial F, it's all going  
10 to get us at that final estimate of scale, which is what we really  
11 care about here, so we can interpret, are these F's a lot or a  
12 little or somewhere in the middle. So again, this is all  
13 exploratory sort of stuff, but if you fix the selectivities, I  
14 would hope that you would still be able to profile over R0 or  
15 initial F, and just see if the model has any clue, if it thinks it  
16 has any information.  
17  
18 These profiles, just for everyone else, these likelihood profiles  
19 should give you an insight into how much information content there  
20 is for this particular parameter. And this one that we're talking  
21 about here, this log R0, which is initial recruitment, is the scale  
22 parameter that we're trying to get. And it would be curious to me,  
23 just to know, is the model going, I have no idea. It could be a  
24 very wide amount or is it really, really pinpointing sort of a  
25 small amount of potential values. That could be a point of  
26 discussion depending on the behavior of the model. And again,  
27 initial F could be the other thing to profile over, because really  
28 what we're getting down to is a model that doesn't know the scale,  
29 and we want to quantify that uncertainty in the scale. You can do  
30 it through these hypothesized, long catch time series. You can do  
31 it over initial F. You can do it over telling it what R0 is, right?  
32 Then you're just telling it the scale and profiling over that.  
33  
34 So, all doing the exact same thing. So, maybe my suggestion is we  
35 don't need to beat folks over the head too much with this. We know  
36 where the issue lies. Maybe going with one of these profiling in  
37 the year of 2000 by fixing selectivity, if that was causing  
38 problems and see at a reasonable value, and it seems like you have  
39 a fairly decent understanding what selectivity is now. Maybe that  
40 would help us kind of quantify the uncertainty in this, which will  
41 then help you quantify your stock status and give you that measure  
42 of uncertainty that then managers can digest. Thanks.  
43  
44 **ADYAN RÍOS:** So, I think we're thinking along the same lines, but  
45 I just want to highlight that we did do a profile of initial F on  
46 the model starting in 2000. We ran it over a very wide range and  
47 saw that instability. We were getting very different selectivities  
48 across runs, even one run after the next.

1  
2 So, in order to kind of obtain on a profile of initial F or R0  
3 that makes sense, we do need to constrict the model a little bit  
4 and selecting a selectivity is where we want to go. So, that's  
5 exactly what we want to do. But in order to kind of pick a  
6 selectivity, and all of these models resulted very identical  
7 selectivities as well, which isn't surprising, so this is kind of  
8 the steppingstone to be able to do that and then free this up  
9 again.

10  
11 **VANCE VICENTE:** Yes. Jason Cope has a comment in the chat.

12  
13 **JASON COPE:** If I may just add to that comment. I'm curious when  
14 you say the selectivities were kind of moving all around when you  
15 tried to do that initial F profile. Do you know if you were actually  
16 still fitting the data in the model or was it basically just  
17 quitting? Was the model going, with that initial F hypothesis  
18 really can't fit the data, here's a weird selectivity trying to do  
19 the best it can, but it's really not ultimately fitting the data.  
20 And if so, that is what likely a profiling is going to do. It's  
21 going to put you in places where you just don't fit the data well  
22 and those would be selectivities you don't trust.

23  
24 So, I'm curious how much of the sensitivity around the different  
25 selectivities being estimated are viable alternative selectivity  
26 fits or are they just models that did the best they can, trying to  
27 estimate what it could, but really, given the initial F value,  
28 really couldn't get there, and then you can see it in the model  
29 fits. The residuals are terrible, you can visually see that the  
30 lengths and whatever else are not getting fit well.

31  
32 **ADYAN RÍOS:** So just a quick response to that, is we do see some,  
33 so there's a lot of parameters in the dome-shape selectivity, so  
34 we see a lot of variability in where the peak starts, as well as  
35 to what extent the dome, the domeness. And so that's where a lot  
36 of the play was. And domeness has a very big effect on SSB.

37  
38 I see Erik, your hand.

39  
40 **ERIK H. WILLIAMS:** So Adyan, what you just described is exactly my  
41 concern. So, if you do go down the road of fixing selectivity to  
42 then do a profile. The problem is you're dealing with a dome-shape  
43 selectivity and in that dome-shape selectivity, the domeing part  
44 is going to be completely intertwined with your assumption about  
45 F and it they're wrapped up together. And that doesn't surprise me  
46 that you're seeing that in the model behavior, because, yeah,  
47 they're going to be highly correlated.

48

1 **ADYAN RÍOS:** I think we can-- That's the next slide that we will  
2 talk about what information we can gain about how we approach  
3 selectivity, particularly for the commercial dome first, since  
4 there are model runs that take it to a full dome. And so, I'll  
5 transition into this topic because I think it's a nice segue that  
6 we just provided with Erik's comment about the flexibility that  
7 the model can fit and interpret with the different selectivities.  
8

9 And so, we want to talk a little bit about the dome-shaped  
10 selectivity. Previously when we looked at a plot and we were  
11 talking about logistic versus dome, we established that larger  
12 fish are unavailable to the gear or return to water and so that  
13 provides a justification, the hypothesis for using a dome-shaped  
14 selectivity. And then, the next kind of question that we have is  
15 how sharp the behavior is for the maximum size of fish that are  
16 retained by this fishery.  
17

18 And so, this dotted blue line, it would tell us that the limit  
19 varies that sometimes large fish are retained, sometimes they're  
20 not. Versus the purple line says that it's very sharp we really  
21 keep fish up to this size, after that size, they're not really  
22 desired by anyone, and that after that size, we return them to the  
23 water.  
24

25 So, this is just a drawing to exemplify that, but it also reflects  
26 another attribute that we can kind of pin down for selectivity,  
27 does it approach zero or do individuals continue to do large  
28 individuals occasionally caught by the fishery?  
29

30 We do not see individuals in the landings TIP data above 46  
31 centimeters and so with that, we kind of recommend or suggest the  
32 kind of path for moving forward of pinning down a few more things  
33 in the model. So, a few more assumptions in this, of the fleet  
34 dynamics, in order to be able to better profile our other two  
35 important parameters,  $R_0$  and initial  $F$   
36

37 And the initial runs, both, where the dome ends, as well as the  
38 slope, as well as where the peak happens, and how long the peak  
39 is, are estimated. And so, this is kind of a recommendation for  
40 applying what we know about the fishery to inform that fleet  
41 dynamics inside the model.  
42

43 And so, to this we would like to see if there's anyone on the call  
44 who can tell us a little bit about the limit. How it fixes that  
45 limit? How that market maximum size?  
46

47 **ADYAN RÍOS:** Okay, Adyan, please continue.  
48

1 **KEVIN MCCARTHY:** I'm going to ask Adyan's question in a slightly  
2 different way and I'm going to put it to the fishers on the call,  
3 especially Julian since we're talking about Saint Thomas and Saint  
4 John.

5  
6 I guess, what we're trying to get at, Julian, is, is there a size  
7 of triggerfish that is just too big for the market and people don't  
8 bring it in? Is that a very well defined limit, like when you get  
9 to X number of inches, nobody lands them bigger than that and  
10 that's pretty standard for all the fishers? or do some fishers  
11 land things a little bit-- Like their maximum size might be a  
12 little bit smaller and some other folks might have a maximum size  
13 that's a little bit bigger but above a particular size nobody lands  
14 them? Or is there something else going on when we're talking about  
15 the maximum size of a triggerfish that somebody will land in Saint  
16 Thomas to sell?

17  
18 **JULIAN MAGRAS:** Alright, good morning. Julian Magras for the  
19 record. Can you guys hear me?

20  
21 **GRACIELA GARCÍA-MOLINER:** Yes, Julian. Thank you.

22  
23 **JULIAN MAGRAS:** Okay. So, the response to what Kevin asked. Kevin,  
24 made it a little easier to understand. Our market, the best size  
25 fish is a fish between a three-quarter pound to a fish up to two  
26 pounds. Those are the size fish that are very easy to sell.

27  
28 They're the restaurant size and the people that like to bring them  
29 to their house and do their cooking home. That's the size that  
30 they look for. Anything over that size, two pounds or up, 90% of  
31 the fishers don't bring in those fish because they don't have a  
32 market for them and they will be stuck with them or they'll be  
33 having to clean them, junk them up and sell them at a very lower  
34 price. So, they rather release them, than bring them in.

35  
36 Now, in my case, I bring them in because I have created a market  
37 with a couple of restaurants that anywhere between two pounds to  
38 four-and-a-half pounds, in that area, four pounds, they use them  
39 as fillets that they use to make fish tacos. So, the hospital,  
40 which I actually just came from dropping off 123 pounds of fillet,  
41 they actually use them to sell to the patients and to the public.

42  
43 I only have two customers out of the entire island that buy the  
44 fillets. So that's why I say, 90% of the fishers release those big  
45 ones. You know, right here at my market, I've got Tony and I've  
46 got Patrick, those guys, they release them unless I tell them,  
47 "Hey guys, I have a market this week, I need a hundred pounds.  
48 Help me out. I'm not going out or I don't have enough." But

1 otherwise, the targeted or the size that we retain is between a  
2 three-quarter pound to a two pound fish. If that helps.

3  
4 **KEVIN MCCARTHY:** Thanks, Julian. That's really helpful. One follow-  
5 up question. How long has this fillet market been in operation? Is  
6 that just in the last couple of years? Or you've been doing that  
7 for say, 10 years?

8  
9 **JULIAN MAGRAS:** I would say that that in the market that I work,  
10 I would say it's been like that from like 2017, after the  
11 hurricanes.

12  
13 **KEVIN MCCARTHY:** Okay. So, fairly recent.

14  
15 **JULIAN MAGRAS:** Yes.

16  
17 **KEVIN MCCARTHY:** Okay, great. That's great information. Thanks a  
18 lot.

19  
20 **JULIAN MAGRAS:** All right. Thank you.

21  
22 **ADYAN RÍOS:** Okay. I think we'll move on to the next kind of new  
23 decision and need for discussion and then we can kind of circle  
24 back.

25  
26 So the next one is the RVC selectivity, which we are allowing the  
27 model to estimate a dome. However, it is estimating a flat top to  
28 fit the data that are seen in the model. And so, the model estimates  
29 flat top selectivity, but deeper surveys have observed bigger fish.  
30 So, the same team that does the RVC survey have also started, in  
31 more recent years, doing a deeper survey. And from the initial  
32 results, they are seeing a skew towards larger fish in those deeper  
33 habitats compared to what they see in the shallower habitats of  
34 the habitat that is surveyed by the reef visual census.

35  
36 And so, here we have another kind of decision for moving forward  
37 with either flat top sensitivity or exploring levels of the dome  
38 to kind of try and reflect that, even though our current model  
39 doesn't know about the existence of those larger fishes in that  
40 deeper water. That's just kind of ancillary information that we  
41 have about this survey.

42  
43 Julian, I see your hand up, but that might be from earlier.

44  
45 **JULIAN MAGRAS:** No, actually, a couple of things I wanted to add  
46 in. We do work with Virginia Shervette and in the fish that were  
47 collected, let's use the queen triggerfish. We collected all sizes,  
48 but we brought in a lot of the biggest size fish, that were

1 released, for her to get that information on them, which we would  
2 normally release. And then, recently on her last visit to Saint  
3 Thomas to collect samples, I gave her a bag with a bunch of baby  
4 ones that we release. So, I know it might be available, that it  
5 can be part of this actual process because we are way down the  
6 line in the process, but I got that because we didn't know that  
7 you needed that before. So, I got those little ones. I saved them  
8 for her as I put on a record at the SSC meeting before and she was  
9 given them upon her last visit.

10  
11 Also, when you talk about going back years of landings, I can  
12 recall there was a fishery-- what do you call it? Like a co-op or  
13 I know the guy, Stewart Loveland. He ran like a fishery that had  
14 a lot of queen triggerfish involved and there were a couple of  
15 restaurants back in those days that did catch some of those bigger  
16 fish, but that market disappeared, when they disappeared. Not  
17 having the co-op and not having that place that sells the fish and  
18 also those restaurants that used to sell the biggest size fish  
19 that we don't sell.

20  
21 So, I just wanted to put it out there because I heard you guys  
22 saying looking for a lot of different comparisons back then and  
23 now. So, I think that's good information to be on the record. Thank  
24 you.

25  
26 **VANCE VICENTE:** There are some notes from Shervette to everyone.

27  
28 **ADYAN RÍOS:** Two to three years of randomized commercial queen  
29 triggerfish sizes from our life history study that can be used to  
30 derive values for this. We have the maturity and age data for those  
31 small fish Julian just mentioned. Yeah, those are great additions  
32 to the body of life history information, as well as telling us  
33 about what sizes are observed from the fishery, as well as what  
34 sizes are observable, you know, are caught but not retained. And  
35 so that's additional information that is helpful.

36  
37 And for the historical information, the co-op, do you know what  
38 year it disappeared?

39  
40 **GRACIELA GARCÍA-MOLINER:** Julian, do you know the years of the co-  
41 op?

42  
43 **ADYAN RÍOS:** You're muted, Julian.

44  
45 **JULIAN MAGRAS:** Sorry, I missed that. Can you repeat the question?

46  
47 **ADYAN RÍOS:** Can you tell us about the years of the co-op?  
48

1 **JULIAN MAGRAS:** I don't know. I'm going to send a text message out  
2 to one of the older guys that worked at the co-op, which is actually  
3 my present boss, and I'm going to ask him what the years of the  
4 co-op were, and I'll have it up for you guys shortly.

5

6 **ADYAN RÍOS:** Thank you.

7

8 **JULIAN MAGRAS:** You're welcome.

9

10 **ADYAN RÍOS:** Speaking of the RVC index and the models, being able  
11 to estimate it as dome, but estimating it as flat top, here's where  
12 we kind of are incorporating information potentially about cryptic  
13 biomass and larger individuals elsewhere than where this survey is  
14 operating. And so, is this something to pursue or is this something  
15 to await additional research and additional data that allows us to  
16 better parameterize this?

17

18 I think we could also, being that it's 10:30, perhaps take a break  
19 and we've-- This is the third topic of the new topics for  
20 discussion to help us determine how to move forward. And so, I  
21 think we could probably take a break here and then revisit these  
22 topics. I see a hand up.

23

24 **VANCE VICENTE:** Okay, let's have a 15-minute break and then come  
25 back. I'm sorry. Julian, you may answer. Julian, your turn.

26

27 **JULIAN MAGRAS:** Okay, yeah. So, I'm here talking with one of my  
28 older fishermen and he said, both, the co-op and the store that  
29 Stewart Loveland was running back in the day, this all happened in  
30 the early '70s, early 1970s. So that's how far back this went back.

31

32 **VANCE VICENTE:** Okay. Thank you, Julian. So, let's have a 15-  
33 minute break.

34

35 **GRACIELA GARCÍA-MOLINER:** So, we'll be back at 10:50. Is that okay,  
36 Adyan?

37

38 (Whereupon, a brief recess was taken.)

39

40 **VANCE VICENTE:** It's 10:50 a.m. We shall resume our meeting. Adyan  
41 was explaining the RVC flap-top models, the flat-topped  
42 selectivity and the dome selectivity, and there were several  
43 discussions on this topic. So, Adyan, when you're ready, you may  
44 continue. Please.

45

46 **GRACIELA GARCÍA-MOLINER:** Kevin, are you there? Hello? Richard,  
47 Jason, Erik Williams are you all there?

48

1 **JASON COPE:** This is Jason, I'm here.  
2  
3 **VANCE VICENTE:** Okay, thank you. We're waiting for Adyan to resume  
4 the presentation.  
5  
6 **GRACIELA GARCÍA-MOLINER:** Kevin, are you with Adyan?  
7  
8 **RACHEL BANTON:** They're joining in right now. I think they're  
9 joining from Adyan's account.  
10  
11 **GRACIELA GARCÍA-MOLINER:** Okay. Thanks, Rachel.  
12  
13 **ADYAN RÍOS:** I am back. I'm sorry about the connection issue  
14 [inaudible] getting back from break.  
15  
16 **VANCE VICENTE:** Okay. Thank you, Adyan. Do you want to resume the  
17 presentation?  
18  
19 **ADYAN RÍOS:** Yes, thank you. Here are our three new topics for  
20 guidance. How shall we proceed with advice and input from the SSC?  
21 We can kind of revisit these in the same order, or in reverse  
22 order.  
23  
24 **VANCE VICENTE:** Well, let's follow that same order that you have  
25 on the screen.  
26  
27 **ADYAN RÍOS:** Okay so that brings us to revisiting the initial F,  
28 how to inform the initial F. And so, I think in the notes earlier,  
29 we also talked about profiling initial F and profiling R0.  
30  
31 **VANCE VICENTE:** Adyan, Erik William has raised his hand before you  
32 continue, please.  
33  
34 **ERIK H. WILLIAMS:** Thank you, Vance. This is Erik Williams. So,  
35 yeah, sorry for that. I would say, let's actually tackle that last  
36 bullet because I think that one, we can sort of, going back to  
37 your last slide, we can tackle that last bullet very quickly,  
38 hopefully, and then--  
39  
40 So, just to tell you where I'm coming from. I think this model is  
41 going to require us to pin down quite a few things and we just  
42 want to make sure with the order of operation in the way that we  
43 pin things down or sort of make assumptions is going to matter in  
44 terms of where we end up. But this one seems like one we can  
45 probably quickly settle.  
46  
47 My take on this is, if you have any data to suggest that flat top  
48 is not appropriate, which it sounds like there is, we should

1 probably put some doming in. The question is, do you have data to  
2 tell exactly how much doming to put in? I don't know the answer to  
3 that. So, that would be my take on that.

4

5 **VANCE VICENTE:** Kyle Shertzer, please.

6

7 **KYLE SHERTZER:** I don't think we do have information on the amount  
8 of doming. So, there is this information out there from the deeper  
9 surveys, that's not part of this assessment, that suggests there  
10 are some larger fish out there than what are observed in the  
11 survey, so that suggests that it is don't shaped. But we don't  
12 really have any information in the assessment that would allow us  
13 to estimate the amount of doming. So, I guess on first principle,  
14 I agree, Erik, that it should potentially be dome-shaped, but we  
15 would have to pin down the amount of doming with assumptions, and  
16 if we do that, I guess we could explore the effect of that through  
17 sensitivity analysis or ensemble modeling.

18

19 **ERIK H. WILLIAMS:** Yeah, I agree, Kyle. I mean, that's the trade  
20 of it. You know, do you just start with flat top and then deal  
21 with the doming as a sensitivity issue? Or do you make a, sort of  
22 swag of sorts about the doming and then sensitivity around that.

23

24 **VANCE VICENTE:** Okay, Adyan, you what to continue?

25

26 **ADYAN RÍOS:** So just to kind of take notes on this. The  
27 recommendation from the SSC is to pursue the additional information  
28 to some extent to inform the dome. To try that.

29

30 **ERIK H. WILLIAMS:** Sorry, Jason. I just saw your hand go up. I'll  
31 jump in ahead. I would say, you know, the degree of doming I can't  
32 imagine is going to be terribly great, but I could be wrong, but  
33 I would say that making the base run base model assumption of flat  
34 top selectivity is probably okay and then to do a sensitivity on  
35 the doming and then that sensitivity will guide how important that  
36 really is. If it turns out that just a little bit of doming makes  
37 a big difference, then really what that would drive at is, okay,  
38 make it a high priority to look at the science and the data to  
39 determine, to try and pin down that doming. But if it turns out  
40 it's not, then, you can pin that down at a later point.

41

42 **VANCE VICENTE:** Okay, Jason, you raise your hand.

43

44 **JASON COPE:** Yeah, mean, I think we've triangulated the issues  
45 here, and looking at this particular plot here, I mean, if those  
46 are two hypotheses that seem reasonable, I would kind of be  
47 surprised that this would provide a ton of difference in the model  
48 outputs. This difference now, I don't know, but this doesn't seem

1 like it'd be huge. Now if we are talking about a much stronger  
2 dome shape, then that's a whole other issue, but if this particular  
3 index does not seem to have a huge amount of difference between  
4 the flat top and the dome shape selectivity, maybe this is  
5 something to look at once you get a different base model ready.  
6 Now, what would that next base model be? The other two dimensions  
7 of the bullet points that we're talking about, right? The  
8 selectivity in the fishery that is more, much more dome-shaped, so  
9 there'd be more cryptic biomass there versus the uncertainty in  
10 the scale of the population, right?

11  
12 I almost feel like. I didn't quite understand whether maybe this  
13 is a natural progression to the next bullet point, backwards, the  
14 middle bullet point, how much of a difference in the presumption  
15 of dome shapeness is there for that as well? Because really, if  
16 you could do a grid search over a certain amount of dome shapeness,  
17 across a bunch of different either initial F's or R0's or whatever  
18 it is, they're all the equivalent thing, in order to really get  
19 this idea of what's the uncertainty around the scale, which then  
20 will give us what's the uncertainty in the exploitation rate going  
21 on in the population.

22  
23 And, so I feel I feel like if we can bound the selectivities for  
24 these two, for this survey and for the fishery, in reasonable ways  
25 and then step back and say how much we think how big those are, if  
26 those are going to be major axes of uncertainty, you can then  
27 really progress to fixing that, profiling over either initial F or  
28 R0 and then adjust the fixed selectivity to a different value and  
29 profiling over again. Again, this would be like a grid search in  
30 a way, it's like a double profile over two parameters and that  
31 would give you, I think, the bulk of what this assessment is  
32 challenged with, which is trying to figure out, given the  
33 selectivity interpretation of the data, what the scale of the  
34 population is.

35  
36 **VANCE VICENTE:** Okay. Adyan, please continue.

37  
38 **ADYAN RÍOS:** Okay, so that kind of ties all three points together  
39 but I'm still wrapping my head around how to-- so basically,  
40 bounding parameters for RVC, bounding parameters for the fishery  
41 selectivity and then profiling.

42  
43 So, there's three levels there. Well, I guess because you could  
44 pair the RVC with different runs of the commercial domeness. So,  
45 would we kind of use an ensemble approach and kind of allow that  
46 to run randomly or would that be more of a systematic profile?

47  
48 **VANCE VICENTE:** Jason?

1  
2 **JASON COPE:** So, Adyan, I'm just curious, like, what is the range  
3 of reasonable RVC and commercial selectivity? Like how, in my mind,  
4 I don't know how much you think those could range. Like are we  
5 looking at in this figure that you've provided us, is that kind of  
6 the two bounded possibilities for the RVC?  
7  
8 **ADYAN RÍOS:** No, this is just a cartoon. So, we've seen runs that  
9 differ in reaching levels of domeness and then once we fix the  
10 initial F, that's where we do see the logistic. And so, that's  
11 kind of the order of operations. I think that is very important  
12 that Erik refers to.  
13  
14 I guess another potential way forward for just, you know, picking  
15 something reasonable, which is just the logistic or just the flat-  
16 top and then picking a reasonable kind of just the hard assumption,  
17 the most livable assumption of these situations and then to be  
18 able to profile R0 and initial F without as much flexibility in  
19 the selectivities. And then from there, be able to kind of revisit  
20 what selectivities to profile those parameters over next.  
21  
22 So instead of picking ranges at this point, perhaps just picking  
23  
24 (Part of Mrs. Ríos' comment is inaudible on the recording.)  
25  
26 **JASON COPE:** Yeah. So that kind of gets back to that initial very  
27 strong assumption, and I think Erik rightfully points out that--  
28  
29 **ADYAN RÍOS:** a starting--  
30  
31 **JASON COPE:** Oh, sorry. Sorry. Sorry, you might be coming in and  
32 out, Adyan, or I might be coming out. I didn't mean to talk over  
33 you. You dropped out. Should I keep talking or do you want to  
34 finish your thought? I'm sorry.  
35  
36 **ADYAN RÍOS:** No, go ahead. You haven't it interrupted.  
37  
38 **JASON COPE:** Okay. So yeah, thinking through this, right. If we  
39 think about this and you fix selectivity in both of these two data  
40 sources, you are coming at this by saying, we know this selectivity  
41 and therefore given this selectivity, conditioned on this  
42 selectivity, here's a profile over this really important scaling,  
43 ultimately scaling parameter in the population that's going to  
44 help us interpret, essentially, what the stock status is and how  
45 many fish are out there and what catches you could set.  
46  
47 Then you say, well, that is going to be dependent or it's going to  
48 be sensitive to the choice of the selectivity. And so, it really

1 comes down to this question of how much of a range of selectivities  
2 are plausible. You've also noted that you have done profiles in  
3 certain ways. I think Kyle may have pointed out that init F and R0  
4 profiles could be done again or something. But I think what you  
5 were saying was, when you do profile, you leave selectivity  
6 estimable. So, you let the model say, let's fit the data the best  
7 we can, given, in this case, again, I'm just going to use R0 and  
8 init F interchangeably, either one of those, by fixing that value  
9 and then letting it fit the data the best it can through estimating  
10 selectivities, you said that the selectivities do change quite a  
11 bit.

12  
13 It still wasn't apparent to me how well the data were being fit.  
14 But it does sound like the selectivities do change. So, the model  
15 is forcing flat-tops or less domeness or more domeness, depending  
16 on what you do. I guess this comes down to the question of, looking  
17 at such a profile as that and really seeing how much, even though  
18 it's changing the selectivity, does it actually fit the data as  
19 well? And if it's not fitting the data as well, maybe this profile  
20 does indicate that as you adjust the selectivity to try to fit the  
21 data better, it really isn't giving you a better fit. And so, that  
22 that could be one line of evidence.

23  
24 The other thing that could happen is it does suggest selectivity  
25 and it does fit the data just as well. And then, what that tells  
26 you is you have a lot of uncertainty in plausible selectivities.  
27 And so, I guess that's where I'm kind of stuck with is not fully  
28 understanding whether there is information in these profiles to  
29 say that even though you're adjusting selectivity, certain  
30 selectivity, parameterizations and values are fitting the data  
31 better than others, or is it basically just a sliding scale that  
32 says, "okay, if init F or R0 is assumed to be this, well, then  
33 we're just going to adjust selectivity and fit the data equally as  
34 well as we did before, but with a completely different  
35 interpretation on the way that the fishery is removing and the  
36 index is seeing the fish in the population." Is that making sense?

37  
38 **VANCE VICENTE:** Kyle Shertzer, please.

39  
40 **KYLE SHERTZER:** It does make sense, Jason. My question was a  
41 procedural one. Do we have an opportunity in this meeting to sort  
42 of run off and do what you're suggesting and come back to the group  
43 with the results to get input. If we were to do a profile, say, on  
44 R0 and examine how that affects the estimated selectivities and  
45 the fits to data, is that something that we have an opportunity to  
46 do in this meeting and resume after doing those runs?

47  
48 **VANCE VICENTE:** Well, if Adyan doesn't have any limitations, I

1 mean, I think it's a very proper thing to do.  
2

3 **JASON COPE:** I mean, that would be wonderful, obviously, to be  
4 able to kind of see that as a group here and talk through it. I'm  
5 not sure how much more we have for this, but if we're kind of  
6 hitting a natural end point here, maybe we, yeah, maybe we allow  
7 that time and can shift to other duties and then come back to it  
8 towards the end of the day or whenever you're ready and revisit  
9 it. I'll leave the SSC's chair to determine whether that makes  
10 sense for the agenda.  
11

12 **VANCE VICENTE:** I think we can fit it in. Again, I don't know how  
13 much time those Adyan and Kyle have to run these different  
14 scenarios.  
15

16 **JASON COPE:** I certainly don't want to speak to the assessment  
17 teams-- what they're able to do. It isn't an unreasonable--  
18 something like that could be done in a reasonable amount of time.  
19 Maybe I'll say it that way. Again, I don't want to presume though,  
20 given other duties and responsibilities today that they may have,  
21 whether they have that time but doing such a profile isn't  
22 unreasonably done in a decent, in a short amount of time.  
23

24 **VANCE VICENTE:** Okay. Kevin McCarthy.  
25

26 **KEVIN MCCARTHY:** So, I think what we'd like to do is to get through  
27 all of the slides and then have Adyan and Kyle see how much they  
28 can get done in the time available to them and come back to these  
29 questions with their results, if they're able to produce them,  
30 later in the afternoon.  
31

32 Does that seem reasonable, get through the slides and then let  
33 have Adyan break away and see what they can get accomplished?  
34

35 **VANCE VICENTE:** Well, I agree. let's see. I think that's a good  
36 way to do it. Let Adyan finish up showing the slides and the  
37 different graphs that we still need to look at. And then, yeah, we  
38 can have some time this afternoon, I think. But we'll try to get  
39 everything done on this topic this morning as proposed. Richard?  
40

41 **RICHARD APPELDOORN:** Yeah, just a question. I don't know if you  
42 saw Virginia's comment in the chat. She's saying most of the larger  
43 ones are males. And she goes on and talk about how much they might  
44 be visible relative to, I guess, the smaller ones in the surveys.  
45 But if they're really males, and we're not capturing them  
46 completely, we're not really losing any information on the spawning  
47 stock, in that regard, unless you think that sperm competition is  
48 going to become really tricky at some point, which shouldn't be,

1 because if we're not taking large ones, we have an excess of males.  
2  
3 So, can we just make an assumption of a flat top on the official  
4 census, even if that's not strictly true, as I said, it wouldn't  
5 be affecting any estimation of what the female spawning stock  
6 biomass might be. So, my comment.  
7  
8 **VANCE VICENTE:** There are some chats, which need to be read out,  
9 but Kevin, go ahead.  
10  
11 **GRACIELA GARCÍA-MOLINER:** Kevin, you're muted.  
12  
13 **KEVIN MCCARTHY:** We've got multiple ways to mute over here, so  
14 we're sometimes cross purposes. Anyway, this is getting back to  
15 Jason's comment in the chat. The concern is that the larger fish  
16 might be deeper than the standard RVC survey. They did what they  
17 call a DCRMP. I'm not sure what the max depth was for that, but  
18 it's deeper than the usual 30 meters, which is the max depth of  
19 the RVC survey. So, there could be some additional information  
20 there. I'm chatting with the folks that run that survey.  
21  
22 We do run into the problem of, here towards the end of this process,  
23 or hopefully nearing the end of this process, suddenly adding  
24 additional data, which puts a real burden on, not just the  
25 assessment team, but getting things done in the foreseeable future.  
26 But if that's something that's relatively quick to compile, it may  
27 be able to inform a little better this selectivity, but I'm not  
28 sure what the constraints are for the RVC team either. But that's  
29 the concern is that the larger fish may be deeper and therefore  
30 not seen in those diver surveys.  
31  
32 **VANCE VICENTE:** Okay. Thank you, Kevin. Well, Adyan, I think that  
33 you should complete the presentation of the slides and figures,  
34 and then we can go into further discussion, but let's get this  
35 presentation completed.  
36  
37 **ADYAN RÍOS:** Okay. Thank you. So, the first topic of the two topics  
38 that are remaining for discussion on kind of the plan ahead. One  
39 of the topics is the control rule Tier guidance and the second  
40 topic is gathering comments and discussion about characterizing  
41 uncertainty.  
42  
43 So, here we have the ABC control rule. A big difference between  
44 Tier 2 and Tier 3 is whether the uncertainty is characterized by  
45 Sigma or by a PDF of the OFL generated from, like, an ensemble  
46 approach and the kind of conditions for use, for data moderate,  
47 for Tier 2, reads as what you see on the screen.  
48

1 So, two of the three time series, catch, stage composition, and  
2 index of abundance are deemed informative. And the assessment can  
3 provide those values. And then, Tier 3 is when you only have one  
4 of those, or two of those, or they're deemed of, you know, limited  
5 or still having uncertainty in them.

6  
7 And so, for the assessments thus far, I believe we've been in Tier  
8 3 for, for example, for spiny lobster where we had catch and length  
9 composition. But now we do have an index of abundance, but the  
10 question is just conversation about, are we fully in Tier 2? Are  
11 we in kind of in both Tiers? Are we, you know, is there guidance  
12 on moving forward with this PDF of OFL as kind of a little bit of  
13 advancing the approaches and really entering into Tier 2, if we're  
14 on board and that is the goal for the current assessment.

15  
16 Because if the workload ahead will depend on the Tier, and how we  
17 characterize uncertainty, how we present that information and work  
18 with that information, will slightly differ based on those Tiers.

19  
20 **VANCE VICENTE:** Well, Adyan, let's continue with the slides and  
21 then we can discuss regarding the Tier 2 or Tier 3-- Richard.

22  
23 **RICHARD APPELDOORN:** Is Tier 2 requiring an estimate of MSY or is  
24 it also going to use a proxy, because that'll see us getting at  
25 MSY from the discussion that we've had so far.

26  
27 **ADYAN RÍOS:** So, then-- Oh, go ahead, Kyle.

28  
29 **KYLE SHERTZER:** I was just going to respond that we would need to  
30 use a proxy for MSY, especially given that steepness is equal to  
31 one.

32  
33 I guess that, as Adyan suggested, the reason we're asking this  
34 question of the SSC is that it's a real fork in the road for what  
35 we try to provide in the assessment. If it's Tier 3, our  
36 understanding is that the SSC decides on a Sigma that's used in  
37 the control rule. If it's Tier 2, then the assessment needs to  
38 provide the PDF on OFL, which would require some method to estimate  
39 the uncertainty in the OFL.

40  
41 We've been talking about ensemble analysis. There's, I guess, other  
42 approaches we could take. But the actual work that we do and  
43 information that we provide in the report sort of depends on which  
44 Tier the SSC thinks that this assessment is in.

45  
46 **VANCE VICENTE:** Erik.

47  
48 **ERIK H. WILLIAMS:** So, that's a nice answer, Kyle, but it doesn't

1 get you out of trying to characterize uncertainty, whether it be  
2 with a full PDF or not, because you don't put us in the spot of  
3 picking a Sigma out of thin air. I hope that's not the intention  
4 there, because that would-- I don't know what we would do in that  
5 case. So, I would hope that, if you can't get to a full PDF, you  
6 can at least get to, I don't know, a bounded, some sort of proximal  
7 bounds of what the uncertainty might look like. And again, that's  
8 likely to come from those profiles. So, anyways.

9  
10 **KYLE SHERTZER:** That's fine. If the SSC thought you were firmly in  
11 Tier 3 and had no use for any PDF that we could drive then we  
12 wouldn't bother, but if you think it would be informative then,  
13 we'll give it a try.

14  
15 **VANCE VICENTE:** I would like to see Richard's comment. I mean,  
16 where do you think, do you think the data is good enough as to be  
17 moderate so that we can use the Tier 2 or the opposite? Or do you  
18 think the data is very much limited? We go with the Tier 3. But  
19 Richard, you're more capable of answering that question than me  
20 and perhaps others in the committee. So, what is your opinion?

21  
22 **RICHARD APPELDOORN:** I'm not sure I have an opinion yet. I need to  
23 go look at some things, but.

24  
25 From the discussions that we've had, it doesn't sound good for  
26 Tier 2, but you kind of want to look at the variability coming out  
27 of that. That's just my thing is, you know, I like to look at stuff  
28 and then see what we're dealing with, but I think someone more  
29 knowledgeable like Jason might be to give a better answer to that.

30  
31 **VANCE VICENTE:** Yeah. Jason I would like to hear from you.

32  
33 **JASON COPE:** I put something in the chat. In my mind, this qualifies  
34 as a Tier 2 Data Moderate Assessment with a whole bunch of  
35 uncertainty. And a whole bunch of uncertainty in some really key  
36 dimensions, specifically in the scale of the population, which  
37 should clearly come out in an OFL probability distribution, right?

38  
39 Because OFL is based on scale. That should be very, very wide. So  
40 maybe this is where folks can express their concerns about a Tier  
41 2. I don't really have concerns about it being called a Tier 2  
42 assessment is just going to acknowledge the fact that this is going  
43 to need to characterize a lot of uncertainty in that scale, which  
44 is probably going to play through in the stock status determination  
45 criteria as well, right? Because depending on where that initial  
46 scale is it's probably going to determine where that relative scale  
47 lands as well.

48

1 So, I anticipate-- There are a variety of different data sources  
2 here. They seem acceptable and reasonable data to include in the  
3 model and they qualify for a Tier 2. I don't think it should be  
4 discounted to a Tier 3 just because of the uncertainty. If I read  
5 this Tier 2 criteria correctly, there is plenty of space to  
6 incorporate as much uncertainty as needed in that Sigma to properly  
7 address the fact that the OFL is going to be highly uncertain and  
8 a buffer should be built around that uncertainty.

9  
10 **VANCE VICENTE:** Jason, thank you. I would like also to hear the  
11 opinion of Adyan and Kyle. They're the ones that are analyzing and  
12 evaluating the different data sources. I mean, what is their  
13 opinion? Do you think we're in Tier 2 or Tier 3? I agree with  
14 Jason. I think that the data is moderate, but I think there's  
15 enough information so as to qualify for Tier 2. But anyhow, I would  
16 like to hear directly from Adyan and Kyle.

17  
18 **KYLE SHERTZER:** I think it's Tier two given the data sources we  
19 have and the type of model that we're able to apply. And as Jason  
20 indicated, there is a lot of uncertainty, but that's not  
21 necessarily a reason to bump it to a different Tier, I think that's  
22 more based on the data sources and information content that we  
23 have that you decide on the Tier, and we can account for the large  
24 amounts of uncertainty in the model results, and that should play  
25 through into the estimated PDF around the OFL.

26  
27 **VANCE VICENTE:** Okay, thank you, Kyle. I would like to hear from  
28 Adyan Rios. Do you concur with Kyle?

29  
30 **ADYAN RÍOS:** I know that we have a lot of uncertainty in the  
31 relative data inputs, and so it's, like we've mentioned, like a  
32 2.5 because we have what reads there as-- we have these time series  
33 with levels of uncertainty that we need to explore. So, I guess we  
34 have a bit of consensus towards that.

35  
36 It might be challenging though, because with the way it reads as  
37 MSY versus MSY proxy, it leaves room for interpretation there. But  
38 I think that's where we will be with an MSY proxy, so I guess it  
39 remains somewhere in between.

40  
41 **VANCE VICENTE:** Well, there's nothing in between Tier 2 and Tier  
42 3. So, what are you inclined to? I mean, you have been looking at  
43 the numbers evaluating the different conditions, the different  
44 type of sampling techniques, the reef visual surveys and whatnot.  
45 So, how do you feel in general? I mean, what is your overall  
46 evaluation of the data that you have been analyzing and discussing  
47 about?

48

1 **ADYAN RÍOS:** I'm also just kind of looking at this more, and it  
2 also says out of date assessments, and we do have a terminal year  
3 of 2020 for length composition. So, if I was in this space of 2.5,  
4 I do think we still want to do our best to profile and provide a  
5 PDF to inform the decision. But when I think about that other angle  
6 I guess I'm in 3. I'm on 2.75.

7  
8 **VANCE VICENTE:** I think that you're more inclined to into a two.  
9 I mean, I'm not too knowledgeable on this mathematical models and  
10 so on. That's why I like to hear from I asked Richard and Jason  
11 and then you two. Between the four of you, we can come to an  
12 agreement before we keep on going with the presentation. Do you  
13 want to leave this for the discussion part at 12, then let's keep  
14 on going and then we go back to this topic.

15  
16 Okay, I don't know, I can't see the names of the two participants  
17 who raised hands. J.J. and then Jason.

18  
19 **JUAN J. CURZ MOTTA:** All right, good morning. J.J. Cruz here,  
20 please. First of all, please, accept my apologies for my late  
21 arrival. I was teaching. Perhaps this is a better question for the  
22 discussion because I'm late. I just wanted to know if within the  
23 committee there was somebody supporting more the idea of Tier 3,  
24 and if so, what would be the argument?

25  
26 Yeah, sorry I'm asking this question because I missed the whole  
27 discussion before. Just to know, if somebody supports 3 and why  
28 would they support 3? Thank you.

29  
30 **VANCE VICENTE:** Any comments? Well, there's no other comments.  
31 Let's ask Adyan Ríos to continue with the presentation.

32  
33 **ADYAN RÍOS:** Jason still has a hand up.

34  
35 **JASON COPE:** Do we need to make this decision right now? I feel  
36 like this is something we would do after we find a final model or  
37 models, see the final results, take everything. At that point,  
38 step back and then evaluate what Tier this would be. So, I feel  
39 like while this is a good preliminary discussion, we don't want to  
40 get too wrapped up in it. I feel like we're going to learn more  
41 after the profiling. We're going to learn more after a final model  
42 is, or models are determined and then that would be the most  
43 appropriate time to finish off this discussion.

44  
45 **VANCE VICENTE:** Okay, that's a good suggestion. who's next? Kyle.

46  
47 **KYLE SHERTZER:** Yeah, that's good. We have what we need, which was  
48 basically, should we put our best foot forward in trying to

1 estimate the PDF? And then later you can decide if that's useful  
2 or informative. We were primarily asking this now because if the  
3 SSC said, "No, we're in Tier 3 and any uncertainty analysis you do  
4 is not useful, then like I said, we wouldn't spend time working on  
5 that, but if it's something that could be useful, then we'll do  
6 it.

7  
8 **VANCE VICENTE:** Okay. Thank you. Adyan, may continue. Uh, hey, I'm  
9 sorry. Hello. Next, I think is Jorge Garcia.

10  
11 **JORGE R. GARCÍA-SAIS:** Si, gracias. Me oyen ahora.

12  
13 **VANCE VICENTE:** Si, te oimos.

14  
15 **JORGE R. GARCÍA-SAIS:** Okay. I just wanted to comment and ask a  
16 question. The comment is that I believe that part of the  
17 uncertainty that we are having here with this issue is of a  
18 socioeconomic nature because the size selectivity of the queen  
19 triggerfish and the fish trapping practices do include uncertainty  
20 in the overall capture statistics. So, we keep failing to  
21 incorporate these socioeconomic aspects into these into these  
22 models for fishery management. I just wanted to add on that, that  
23 we need to somehow consider these more seriously.

24  
25 And the other comment that I had regarding the Tiers. Tier 2, Tier  
26 3, what would be the implications of Tier 2 in terms of the  
27 uncertainty, which has a direct effect on the buffer? And, as we  
28 know, the buffer has another direct effect on what we recommend  
29 for ABCs. So, how does that look-- How would buffer issue look on  
30 a Tier 2 versus a Tier 3? I would like to know.

31  
32 **VANCE VICENTE:** Adyan, could you answer that?

33  
34 **ADYAN RÍOS:** So, it depends because the buffer that's selected by  
35 Tier 3 would be selected by the SSC based on the explorations of  
36 the key pieces of uncertainty in the model, and so that's open to  
37 the decision of the SSC for the values to be considered. And then  
38 for Tier 2, it would be driven by the data and the, the pieces of  
39 key uncertainties and the ranges over those uncertainties would be  
40 collaborative informative process towards building that PDF but it  
41 could be less, it could be more. It depends.

42  
43 Usually data moderate approaches-- So, usually you would expect to  
44 have more uncertainty, the higher Tier you go. So, we would think  
45 that we would, with that kind of generality, that we would have a  
46 smaller buffer for Tier-- it wouldn't necessarily be that way, but  
47 like, as it is stated here, like in principle, there should be  
48 more uncertainty with data moderate approaches than data rich

1 approaches. And I think that also carries over to between data  
2 moderate and data limited. So, there should be more uncertainty  
3 associated with data limited than data moderate.

4  
5 **JORGE R. GARCÍA-SAIS:** I sometimes think that if we should move to  
6 another approach that bounces into less uncertainty. We are sort  
7 of becoming an uncertainty committee. You know, I mean, everywhere  
8 we go, there is uncertainty, and the uncertainty actually carries  
9 out-- I mean, it determines the way we go. So, I don't know, maybe  
10 we should consider other options.

11  
12 **VANCE VICENTE:** Any other comments?

13  
14 **ADYAN RÍOS:** We'll have this conversation, again, when we can also  
15 look at that and more information so we can continue that. And  
16 then this final slide is also related to characterizing  
17 uncertainty, which is something that we could be discussing now,  
18 but we'll also be revisiting. Just for some of the known things  
19 that we know we could look at, sensitivities, the length at age,  
20 the CV so the variability and growth, the initial F, steepness,  
21 natural mortality, the RVC index, we can test to see how strongly  
22 informed the model is by the RVC index versus the commercial length  
23 and the RVC length data alone.

24  
25 Um, then there's also the sensitivities that can be done on the  
26 selectivities. Profiles on R0 and natural mortality. And then, we  
27 would also discuss the projection settings. For example, including  
28 more recent information of landings in the forecast for 2022 and  
29 then projecting from 2023 on, as well as having guidance on the  
30 reference points for establishing FMSY and MSY proxy.

31  
32 So that's the final slide. So, with that. I guess there's a slide  
33 here that just kind of summarizes everything we looked at so far  
34 today, which was some of the decisions that we've made since our  
35 last meeting based on the decisions and conversations of that. So,  
36 the pooling of the TIP data, fixing steepness for now, removing  
37 commercial index, implementing dome-shaped selectivity into the  
38 structure of the model. And then the new decisions the initial F,  
39 the commercial descending width, so that the selectivity of the  
40 commercial maximum size, and the RVC flat top. And then, the topics  
41 of the path ahead, which were the uncertainty and the control rule  
42 guidance.

43  
44 I see a hand. Go ahead, Richard.

45  
46 **VANCE VICENTE:** Okay, Richard.

47  
48 **RICHARD APPELDOORN:** Yeah, thanks. Going back and I really

1 apologize because I should know this, but I'm getting older. How  
2 were we defining Sigma\_min?  
3  
4 **ADYAN RÍOS:** Sigma\_min is on the book somewhere. I believe it's  
5 0.5.  
6  
7 **RICHARD APPELDOORN:** Yeah, I know. I couldn't find it. That's why  
8 I'm asking. Maybe you had that on the top of your head.  
9  
10 **ADYAN RÍOS:** Let me check some of the code for the lobster file  
11 ABC's.  
12  
13 **VANCE VICENTE:** Any comments.  
14  
15 **ADYAN RÍOS:** Typically, at that stage 2, when we're looking at the  
16 ABC for a Tier 3, we also see what the implication of the buffer  
17 combination is. So, we plot that out and report on the percentages.  
18 So, it ends up being more of an expert opinion as far as deducing  
19 the Sigma from interpretation of the expert opinion of the  
20 appropriate buffer. And following the rule that it has to be larger  
21 than two times the Sigma\_min that is on the book somewhere.  
22  
23 **VANCE VICENTE:** Any other question or comment? Richard?  
24  
25 **RICHARD APPELDOORN:** Yeah, a different topic, and I'm really not  
26 trying to make trouble and work for everybody. It seems to me that  
27 if we had, just even a table, a graph might be better, of the size  
28 distribution of queen triggerfish by depths coming out of the  
29 visual census with also some indicator of the number of stations  
30 that were at those depths it-- and we have some [mesophotic?]  
31 information, it's fairly easy to say, whether we should have a  
32 flat-top or a dome slope on that selectivity of those visual  
33 census. But that data would have to be fairly handy to do that.  
34 I'm really not asking anybody do something new at the moment.  
35  
36 **ADYAN RÍOS:** We have seen like a quick rough plot of that, of just  
37 like, as the data were coming in before they kind of were  
38 finalizing their QA/QC and developing the documentation that  
39 they've been working on and it's basically just a comparison of  
40 the full RVC to the full Deep. Because the way the RVC is conducted  
41 there's two divers and so that data gets consolidated as well as  
42 across the different habitats. And so ultimately, the data that we  
43 have is a composite that is kind of structured based on the  
44 stratified random design. And so, asking them to kind of tease  
45 apart the raw data a certain way would be something that we would  
46 need to request. Because, you know, because of the strategy of  
47 doing that stratified random design and sampling the habitats,  
48 with the appropriate sampling assigned per habitat, and then

1 piecing it all together by the appropriate weightings associated  
2 with the habitats is how we get to our final length composition  
3 and density estimates across the region sampled by RVC. So, but  
4 that is definitely something to further pursue because of how--  
5

6 It just comes in at a time where we're nearing a more mature stage  
7 of this assessment and those data are still coming in, are much  
8 more recent.  
9

10 **RICHARD APPELDOORN:** Yeah. I'm not really, well, I'm not really  
11 asking to do that, but I think you gave a much more elaborate  
12 answer. You know, we're really not interested at the moment at  
13 what these data are saying, relative to the amount of fish at  
14 habitat in depth. We just want to know what the size ranges are  
15 that they saw. And so, you know, all that refinement that they're  
16 talking about is irrelevant to my question. So, you know, as you  
17 said, you saw the raw data was coming in, maybe that's all you  
18 need to see, is, you know, what do you see? Obviously, yes, you  
19 have a lot more samples. You might see something at the farther  
20 edges of the distribution, but if we had the number of samples in  
21 those and the depths, then we could look at that and just eyeball  
22 it. I think this is really complicated, saying, if we could look  
23 at the data in an uncomplicated way. But like I said, I'm not  
24 really asking you to do it now, especially if that needs to go  
25 back to the RVC people for them to tease out everything.  
26

27 **VANCE VICENTE:** Okay. Reni?  
28

29 **JORGE R. GARCÍA-SAIS:** Hey, yes, on that. On that particular issue  
30 of size distributions per depth. As you know, I have mentioned  
31 before that I have this publication report, final report, the  
32 monitoring of mesophotic habitats and associated benthic and fish  
33 shellfish communities from Abrir la Sierra, Bajo del Sico,  
34 Tourmaline, Desecheo, El Seco, and Boya 4, that was published  
35 December 2020.  
36

37 I mean, the data is not organized as a composite, but per site.  
38 For example, I'm here just looking at the first one that came when  
39 I open up the report for Bajo de Sico, I have for the most recent  
40 period, 2018 to 2020, which the surveys were made, that the mode,  
41 the size mode, is between 40 and 43 centimeters and that is fork  
42 lengths for queen triggerfish. I am not sure what the other data  
43 was we have. The data is certainly skewed toward the right, toward  
44 the larger individuals, and in our previous survey in 2011, there  
45 were much bigger individuals and that's probably, it may be a  
46 little exaggerated due to some divers that were not used to sizing  
47 fish at 165 feet depth. Nitro narcosis works in there considerably,  
48 but still the graphic is very skewed towards the right and for the

1 most recent period, which we had all very experienced divers,  
2 including Milton Carlo, Evan Tuohy, myself, the mode is in the 40-  
3 to-43-centimeters fork for queen triggerfish at Bajo de Sico.

4  
5 What I recall is that most of the fish down in that range, in the  
6 30-to-50-meter depths, are very close to 40 meters, you know, and  
7 35-to-45-centimeter range. That's the data that I have. If somebody  
8 makes a composite from this report, you will have a lot of data on  
9 the 30-to-50-meter depth size distribution for queen triggerfish.  
10 I've sent this several times for the record. That's all. Thank  
11 you.

12  
13 **VANCE VICENTE:** Okay. Any other comments? Richard Appeldoorn?

14  
15 **RICHARD APPELDOORN:** Yeah, I've looked at that data and the data  
16 that we have from [RMC?] stations around the U.S. Caribbean. What  
17 I don't have is what it looked like shallower than that. So, we  
18 can look at the data we have, which isn't much, you know, the  
19 number of individuals is really not that high, but if we don't  
20 have the shallow data to compare it to, that's why I really can't  
21 see anything beyond any of this.

22  
23 **JORGE R. GARCÍA-SAIS:** Well, the RVC is shallow data. I mean,  
24 unless, I mean, if you cut down the most recent inclusions for the  
25 mesophotic data, the RVC data is shallow data.

26  
27 **RICHARD APPELDOORN:** Yeah, I haven't seen that.

28  
29 **JORGE R. GARCÍA-SAIS:** Oh, okay. I thought that that was available.  
30 That's what I understood from the presentation, that it had  
31 included some of these RVC data.

32  
33 **VANCE VICENTE:** Okay, Kyle.

34  
35 **KYLE SHERTZER:** I think this is probably a question for Julian,  
36 but do the fishermen avoid fishing in deeper water because there's  
37 more larger, non-marketable fish there.

38  
39 **JULIAN MAGRAS:** We don't avoid fishing in deeper waters. What we  
40 do is we know where the smaller fish hang out. So, we fish in that  
41 area for smaller fish and when we fish in a deeper waters, we fish  
42 in a deeper waters for the other species and release the big ones  
43 if they're not needed. Does that help?

44  
45 **KYLE SHERTZER:** Yes. And do you, just from your experience, do you  
46 perceive larger fish being in deeper water that you don't encounter  
47 in the shallower water?

48

1 **JULIAN MAGRAS:** Yes, for a lot of species, not only the queen  
2 triggers. Yes.  
3  
4 **KYLE SHERTZER:** Thank you.  
5  
6 **JULIAN MAGRAS:** You're welcome.  
7  
8 **VANCE VICENTE:** Any other comments?  
9  
10 **JORGE R. GARCÍA-SAIS:** One final comment, Vance, and that is, I've  
11 also said this before. With the ROV, we have detected large  
12 populations of queen triggerfish at depths below 200 feet in  
13 Grappler Bank. I believe that the depths that we were talking about  
14 was in the order of 240-260 feet at Bajo de Sico and that included  
15 a school of more than a hundred individuals.  
16  
17 So, the depth range of queen triggerfish is well below a hundred  
18 feet, well below. And even below 200 feet. So, whatever there is  
19 rhodolith habitat, in a horizontally oriented seascape, you will  
20 find queen triggerfish, even if it's below 200 feet because that's  
21 where they nest.  
22  
23 **VANCE VICENTE:** Yeah, that's very interesting, Reni. Any comments  
24 on Reni's comment?  
25  
26 Well, if Adyan has completed her presentation and we've done quite  
27 a bit of discussion between, I mean, within the presentation, we  
28 are ready to go to thing two, which was scheduled for between 12  
29 p.m. and the next half hour, 12:30, which is the recommendations  
30 of the SSC to the Caribbean Fishery Management Council on SEDAR 80  
31 based on the aforementioned presentation.  
32  
33 There has been a lot of discussion, but we haven't come out with  
34 a specific list of recommendations that the SSC should provide to  
35 the Caribbean Fishery Management Council, or are we ready to make  
36 specific recommendations? I'm just opening that question to the  
37 committee. Jason?  
38  
39 **JASON COPE:** Yeah, thank you, Chair. This is Jason Cope. It feels  
40 like we're on hold to do that right now. We might receive some  
41 more information here later this afternoon. So, I would propose  
42 that we set this agenda item aside until we get that additional  
43 information.  
44  
45 **VANCE VICENTE:** Okay, if that is what you suggest. Virginia,  
46 Shervette has a comment on the chat. Can you read it out, please?  
47  
48 **VIRGINIA SHERVETTE:** Did you want me to say it out loud? I'm sorry.

1 **VANCE VICENTE:** Yes, yes. Read it out and let me hear your comments  
2 too. Thank you.

3  
4 **VIRGINIA SHERVETTE:** I just wanted to sort of clarify something  
5 that the last speaker said. We reported on depth of observed  
6 nesting sites for queen triggerfish in our working paper for the  
7 SEDAR assessment. And we had some images of the nests and stuff  
8 too, that were observed and shared with us. The depth ranges from  
9 relatively shallow sites to, you know, there's a site in Lang Bank  
10 where they've been observed in relatively deep waters, but they're  
11 not-- they don't limit their nesting to just deep-water sites.  
12 Just wanted to make that clear. And that again was in the working  
13 paper.

14  
15 **VANCE VICENTE:** Well, if Jason and the rest of the committee agree  
16 that we should discuss the recommendations of the SSC to the CFMC  
17 on SEDAR 80 for that afternoon. We have about half an hour in  
18 between in which we can make any discussion. We can cut out for  
19 lunch and come in at-- it's 12. We come back at 1 instead of 1:30.  
20 That's what I suggest. That way we can give Adyan and Kyle enough  
21 time to run their numbers again. I think that we should stop now  
22 and come back at, it's 12, at 1 o'clock. Because we have another  
23 list of things that we need to go over this afternoon. So, let's  
24 do that. Richard?

25  
26 **RICHARD APPELDOORN:** Michelle's comment in the chat  
27 notwithstanding, I was going to ask, since we have some things at  
28 the end there that may not take that long, do we cram one of those  
29 in now, like, her presentation or one of the other ones.

30  
31 **VANCE VICENTE:** Okay, if Michele is ready to give her presentation  
32 in nassau grouper, we can do that in the next half hour, between  
33 12 and 12:30. Adyan and then Jason.

34  
35 **ADYAN RÍOS:** Yeah, I just wanted to ask for more time than lunch,  
36 so if I could come back later in the day so that I can have lunch  
37 too, like 3 o'clock or 4.

38  
39 **VANCE VICENTE:** Okay. Next, Jason.

40  
41 **JASON COPE:** Yeah. One, I definitely support Adyan's suggestion  
42 there. Secondly, I was just going to say the same thing as Rich.  
43 If we could maximize our time here so we do have the afternoon to  
44 fit back in some of this additional discussion, that would be  
45 wonderful. Thanks.

46  
47 **VANCE VICENTE:** Okay. Thank you, Jason. Michelle, are you ready to  
48 give your brief presentation during the next half an hour?

1  
2 **MICHELLE SCHÄRER-UMPIERRE:** Thank you, Mr. Chairman. This is  
3 Michelle. Yes, I can despite my stomach grumbling.

4  
5 **VANCE VICENTE:** Okay, we'll wait a little while until you get  
6 ready.

7  
8 **RICHARD APPELDOORN:** Was that grumbling or was that a grouper  
9 mating calls?

10  
11 **MICHELLE SCHÄRER-UMPIERRE:** Grumbling. Okay, let me know if you  
12 can see my screen.

13  
14 **VANCE VICENTE:** Yes, we can hear and see the screen.

15  
16 **Nassau Grouper - Michelle Schärer-Umpierre**

17  
18 **MICHELLE SCHÄRER-UMPIERRE:** Okay. Thank you again, Mr. Chairman,  
19 for the opportunity to share some of the recent work that we've  
20 been doing with various species of grouper in Puerto Rico. I just  
21 want to start by letting you know that the Endangered Species Act  
22 critical habitat designation should be coming out sometime at the  
23 end of this year. Thanks to the Council, we were able to work on  
24 a brief pilot project that we've already published, and I believe  
25 was presented at the Council before, regarding the critical  
26 habitats of juvenile nassau grouper. A lot of this information  
27 went into that critical habitat designation that they're working  
28 on to present.

29  
30 But today I wanted to bring up three recent papers that have been  
31 published, mostly collaborative work with other researchers that  
32 are also in this call and in this pilot project report. So  
33 basically, we used S-K funding, that was along with Richard Nemeth  
34 and the U.S. Virgin Islands, of a paper that was published  
35 previously for the U.S.V.I. where we had a proof of concept using  
36 acoustics to identify important habitats for this species.

37  
38 So, this first paper is from Caroline Woodward, who's working with  
39 Laurent Chérubin at Harbor Branch. What we did was use previous  
40 information that we have presented here regarding nassau grouper  
41 and red hind sound production. We've been able to characterize  
42 those different type of sounds, and we know who's calling when,  
43 and we know that those behaviors are associated with reproductive  
44 behaviors.

45  
46 So, we use then a combination of passive acoustic recorders that  
47 were on the seafloor, where we know already, based on previous  
48 research, where these fish aggregate to reproduce. And we also had

1 a wave glider that had recording instruments, and we told this  
2 glider to hang around the West Coast of Puerto Rico at our fixed  
3 stations where we were listening on the seafloor and also move  
4 around in other areas where we did not have listening devices.

5  
6 So, in order for the glider to detect these sounds as it was in  
7 the field and give us a location of where it was picking up these  
8 sounds, the Harbor Branch Oceanographic Institute, in  
9 collaboration with computer engineers, designed an algorithm. And  
10 this algorithm was mounted on the brain of the wave glider. And  
11 we're able to identify in time and space by species, each call  
12 type. So, in February of 2017, we were able to deploy this wave  
13 glider and detect the sounds produced by both nassau Grouper and  
14 red hind throughout the West Coast of Cabo Rojo, Mayagüez, and up  
15 to Bajo de Sico. All of this work was done in the U.S. EEZ Federal  
16 Jurisdiction Waters.

17  
18  
19 So we were able to evidence the areas of benthic habitat that were  
20 used for spawning at Abrir la Sierra and Bajo de Sico and also  
21 some areas outside of these marine managed areas. In some of those  
22 places we've gone back, and we've conducted underwater surveys  
23 where we've been able to confirm that these species are actually  
24 using these habitats off the shelf break of the West Coast of  
25 Puerto Rico for reproduction.

26  
27 So based on the results of this paper that you all can go into, if  
28 you're interested, and look at more detail, both marine managed  
29 areas include significant critical habitats used for the  
30 reproduction of these two species. And additional areas, also had  
31 sound evidence of red hind, but not so much for Nassau grouper.  
32 So, we use this information to see if we can add additional areas  
33 to conduct surveys to better document the recovery of these  
34 species.

35  
36 As you know, right now, we only have spawning aggregation  
37 identified at Bajo de Sico, so we only have one place off the West  
38 Coast of Puerto Rico where we can try to document if the spawning  
39 stock is increasing or decreasing or staying the same. With this  
40 information, now we have a second site where we can go and actually  
41 conduct these surveys and try to address the question of the  
42 recovery of the threatened species, but also address the  
43 sustainability of the red hind based on the protection of their  
44 critical habitats.

45  
46 So, the results of Caroline's work indicate that the spatial and  
47 temporal closures are insufficient to protect the habitats that  
48 these fish are using for their reproductive behaviors, including

1 their migrations. And we need to establish this baseline because  
2 we know that the potential spawning habitat-- So, when you all  
3 think of habitat, we generally think of the seafloor, and the  
4 depth, and the geomorphology but, we also need to understand that  
5 the environmental conditions, that is the temperature, the  
6 currents, and the different things that we still don't know that  
7 these fish respond to, are what make the conditions suitable or  
8 not for them to spawn. And this can affect their distribution, not  
9 only for conducting their reproductive behaviors in space, but  
10 also their phenology, which is when they're going to come into  
11 season, get ready to spawn, get their act together, spawn, and  
12 leave these important sites.

13  
14 So, this information is out there, it's available for us to make  
15 some recommendations based on the protections given to these really  
16 important habitats off the West Coast of Puerto Rico, and we've  
17 already done that for the U.S. Virgin Islands in that previous  
18 paper that I mentioned with Laurent Chérubin. I believe it was  
19 2020.

20  
21 I can pause here if you have any questions about this particular  
22 study. If not, we can go on to the next one.

23  
24 **VANCE VICENTE:** Yes, Michelle, I have a question. This is Vance  
25 Vicente. Excellent information. Very useful. Very instructive.  
26 Very well done. The question I have is whether you replicated the  
27 transects that were conducted back in, right, I think it was 2002  
28 by Rivera, who made acoustic determinations around the whole coast  
29 of Puerto Rico, West Coast, Desecheo Island, and Mona Island, in  
30 which he detected where fish aggregated, including red hinds as  
31 well as others. Did you find any similarities in your findings  
32 regarding this previous study?

33  
34 **MICHELLE SCHÄRER-UMPIERRE:** Yeah, we basically hit some of the  
35 same sites. We actually collaborated with Jose back when he was  
36 doing his estimates of active acoustics. So, he was actually using  
37 sonar to detect the swim ladders of the fish. It's a little bit  
38 different, and we would need to see in what lunar phases we  
39 actually coincided to say if we were getting the same areas hit by  
40 both methods, but it's a possibility.

41  
42 **VANCE VICENTE:** Okay. Thank you. There's a hand up. J.J.

43  
44 **JUAN J. CURZ MOTTA:** Thank you, Mr. Chair. Michelle, thank you  
45 very much. I also want to echo Vance's words, it's a really cool  
46 study. My question is as follows. Were you able to characterize in  
47 this paper, or perhaps one of the other two, what constitute a  
48 habitat. I mean, what will be the characteristics of a habitat

1 where you are likely to find these populations? Thank you.

2  
3 **MICHELLE SCHÄRER-UMPIERRE:** Yeah, we actually did that for the  
4 juveniles. So, we had to go in and do benthic surveys with photo  
5 quadrats and quantify aspects of the live coral cover and the  
6 abiotic footprint. We did not do this for this study. But I know  
7 a lot of the work that Dr. García has done at these sites. We could  
8 actually look at that and characterize it for each species.

9  
10 **JUAN J. CURZ MOTTA:** Thank you.

11  
12 **MICHELLE SCHÄRER-UMPIERRE:** Okay, seeing no more questions, I'll  
13 go on to the next publication that came out recently. This was led  
14 by Evan Tuohy. This was the work that we did thanks to the Council's  
15 funding of active acoustic tags and leftovers of detection array  
16 that we had at the Department of Marine Sciences for Evan's  
17 dissertation.

18  
19 So, this is focusing on the spatial movements of Nassau grouper  
20 during the spawning aggregations. So, at the time, when the fish  
21 are there conducting their reproductive behaviors at Bajo de Sico,  
22 we had 26 of the 29 fish that were tagged, we lost a few at the  
23 beginning, but 26 of them hung around sufficiently over three  
24 reproductive seasons where we could monitor their movements. We  
25 had 16 receivers throughout the shallow area of the seamount at  
26 Bajo de Sico. These steps ranged in between 30 and 75 meters.

27  
28 It's important to note that we did not have full coverage  
29 throughout the bank, so there were some gaps between these  
30 receivers where some of these fish, you know, could move through  
31 there and we would not detect them. But that's what we had at the  
32 moment to work with.

33  
34 We did confirm the occupation of all of the benthic habitats on  
35 the seamount shallower than 100 meters. We know this because some  
36 of our tags that were inserted in the fish actually had pressure  
37 sensors. So, when they were detected by one of these receivers, it  
38 also gave us a pressure reading that was converted into depth. So,  
39 this gave us a good idea of the space that they were using when  
40 they were actually coming together to conduct their reproductive  
41 behaviors. And then, different migrations that they did between  
42 moons, but on the bank, that we also picked up.

43  
44 So, of those three years, one of the years we saw spawning related  
45 movements back and forth from the main aggregation site, from  
46 January to March. And the other two years, we actually detected  
47 these types of movements, between January and April. And this is  
48 something that we had posited before just with the sound data,

1 because we also had listening stations throughout Bajo de Sico and  
2 we were hearing them moving around up to April, but now we have  
3 confirmation that it was in fact the fish moving back and forth  
4 during that month of April. Sometimes this was responding to the  
5 late March moon. So, we have to keep in mind that the moons shift  
6 through the calendar, hence the fish also shift through the  
7 calendar, but the close season doesn't shift.

8  
9 So, we were able to measure the areas that each Nassau grouper  
10 used, and in this context, during the aggregation, and you'll see  
11 in the next paper when they're not aggregated, these areas used  
12 were a little bit larger, but these methods are standard for the  
13 way we measured the spatial use by-- That's how any fish that's  
14 tagged, or any animal that's tagged, basically. And they are pretty  
15 restricted. They are using, compared to other studies, a smaller  
16 area, but we also recognize that Bajo de Sico is a smaller expanse  
17 of habitat. So, they sort of have to make the best of the space  
18 that's available.

19  
20 We also identified that over half of the tagged fish were resident  
21 on the seamount throughout the rest of the year. Again, this could  
22 be higher, but because of the gaps that we had between receivers  
23 and the territorial habitats behaviors of the Nassau grouper, they  
24 could be sitting in an area between our two receivers, and we never  
25 detected them, throughout the non-spawning part of the year.

26  
27 Again, we evidence that the habitats that they use on the bank  
28 range from the shallowest 16 meters to the deepest of 100 meters.  
29 And when there is aggregation activity, they are using the deeper  
30 range of this. And we have to remember that Nassau Grouper, one of  
31 the cues that they use during their spawning aggregation is the  
32 fact of temperature. So, they need temperatures between 25 and  
33 27.5 degrees to spawn. This is actually the cooler temperatures of  
34 the year. We know that these temperatures occur between February,  
35 March and April, depending on the site. But some modeling that has  
36 been done on sea surface temperature indicates that we may be  
37 losing potential spawning habitat as waters get warmer. And at  
38 this site, the fish have access to deeper waters, which may be  
39 cooler and serving as an alternate habitat to spawn.

40  
41 Finally, the results indicate that the current seasonal closure  
42 should include the end of the month of June, specifically to  
43 protect the spawning stock during the aggregations at Bajo de Sico.  
44 There's a lot more in there. You guys can go in there and look at  
45 the paper and get more information. But I think this is our take  
46 home message from this part. So, I'll pause here to see if there's  
47 any questions or comments about this.

48

1 **VANCE VICENTE:** Yes, if I may. I'm sorry for the rest of the  
2 committee. I'm just jumping in without giving the prior chance to  
3 other committee members, but this is really enthusiastic for me.  
4 Again, very valuable, very excellent work, very useful for  
5 management decisions. I really appreciate your work on this. Very  
6 dedicated work.

7  
8 One question that I have is, okay, now there's going to be a  
9 proposal designating a critical habitat, which we must, once you  
10 list a species under the endangered species act, either a  
11 threatened or endangered, you have to have a critical habitat  
12 designation. So, that's good. But the second thing that I think is  
13 very, very necessary is a recovery plan. And this is a very genuine  
14 point brought up by Julian several times and other fishers. Hey,  
15 when do we know that the stock is back to a healthy level that we  
16 can start exploring it? Because these are the primary stakeholders,  
17 which actually depended back in the 70s, largely on the population  
18 of the Nassau grouper.

19  
20 And the other question is, is there a recovery team designated?  
21 Because the fishers need to know, because they're a little bit  
22 tired of designating endangered species, either threatened or  
23 endangered, for many years. Back in the 70s, for example, the green  
24 turtles was a major fish component. And they say, "Hey, since 1970.  
25 When do we know that they can go and fish for listed species?" And  
26 that should be part of their recovery plan. When is a population  
27 going to be able to achieve a stable level, so that it can be again  
28 be used by the fishers. Okay. That's my question.

29  
30 **MICHELLE SCHÄRER-UMPIERRE:** I have Rich, he can answer that one.

31  
32 **RICHARD APPELDOORN:** Well, I wasn't going to address that at all.  
33 I had a different comment. But I'll talk about recovery in the  
34 sense that generally recoveries are related to the lifespan of the  
35 species. Because of the success of generations, you need to have  
36 increase through time to get back to some levels. And, you know,  
37 the levels of nassau are so much below what they were when the  
38 fishery was open for them. You have to think in terms of, you know,  
39 decades. Right now, we're looking at two very small aggregations  
40 in Western Puerto Rico that we've been able to document. You have  
41 the one on Saint Thomas/Saint John, which has been showing signs  
42 of recovery. And Rick was reporting a potential one at Lang Bank,  
43 if I recall. So, we're not seeing, you know, big aggregations of  
44 tens of thousands of fish. So, if you want to know where we were,  
45 and where we'd like to get back to and how long it's taken so far,  
46 we have a really long way to go.

47  
48 So, I raised my hand just to make a point if somebody was wondering.

1 Michelle was talking about spawning in April, but then talking  
2 about potentially extending the closures until June. And the reason  
3 for that is because, although a full aggregation was not occurring  
4 in those later months, fish were still going to the site, hoping  
5 there was an aggregation there. And also, looking at Rick's works  
6 in the Virgin Islands, there, the fish are indeed spawning until  
7 June. So, we're not sure whether the fish over at Bajo are going  
8 to eventually get to that point when they get larger numbers, but  
9 you know, it's certainly a possibility. We have to see, you know,  
10 with a lot more information in the future, hopefully, how the  
11 behaviors on the West Coast of Puerto Rico are comparing to what  
12 is being seen down at the Grammanik. Those are my comments.

13

14 **VANCE VICENTE:** Thank you very much, Richard. Any other comments  
15 or questions for Michelle?

16

17 **MICHELLE SCHÄRER-UMPIERRE:** Okay, hearing none, I'll just move on  
18 to the next slide. This is a third paper produced by Evan et al.  
19 as part of his dissertation work. At this time, he analyzed the  
20 movements of the fish when they were not in their spawning period.

21

22 So, here we have a lower number of tagged fish that we were able  
23 to monitor throughout the three years that were there year-round.  
24 That's why we have 14 of the 29 fish that were originally tagged  
25 actually monitored throughout the non-spawning period. So, after  
26 April, May and June, when they stopped going back and forth to the  
27 spawning site, like Rich just explained, what areas were they  
28 occupying? And it seems they have a very high site fidelity going  
29 back to their same home reef location with some spatial overlap.  
30 But where they overlapped in space, we observe differences in the  
31 depth.

32

33 So, Bajo de Sico has some areas that have very high surface  
34 vertical relief. So, in those areas where there's a lot of high  
35 relief, there's also a lot of crevices and holes in space where  
36 these fish, that overlapped in space, were generally living like  
37 in an apartment complex. You know, some on the penthouse and some  
38 down on the first floor. So, we did also observe in some cases  
39 where fish moved. And after this movement, there were some vertical  
40 distribution differences, which means that they generally were not  
41 tolerating each other a lot so if somebody came in, the other one  
42 moved out. So, we have evidence of these movements at Bajo de Sico.

43

44 And it's really important to note that their core areas, like the  
45 area they use the most, shrinks when they're not spawning. I mean,  
46 we actually had one fish that was sitting next to one of our  
47 receivers and just pinging away day and day night. It did not move  
48 from there. So, this is really important when we're talking about

1 habitat. So, one way of helping recover this species is identifying  
2 those areas and giving them the protection they need, especially  
3 at Bajo de Sico where we know that incidental capture is a big  
4 issue of fish getting caught at these deeper areas and then not  
5 necessarily being vented or descended properly so that they don't  
6 survive.

7  
8 When they are not aggregated to spawn, the areas of critical  
9 habitats that they were using were restricted in range, compared  
10 to when they are spawning, so just between 21 and 75 meters of  
11 depth. And based on these observations, if we want to protect this  
12 species from incidental capture, the current six-month seasonal  
13 closure is insufficient at these shallower areas.

14  
15 And I just wanted to present this map of what areas we are talking  
16 about. So, for those of you that don't know this, Bajo de Sico is  
17 a submerged seamount that is surrounded by very deep waters. And  
18 the pink lines here are the limits of the closed area. And the red  
19 line is the 160-meter contour. The yellow line is the 80-meter  
20 contour. And the green line is the 60 meter contour. So, this is  
21 so that you can have a better idea of how the critical habitats  
22 that the nassau grouper are using, are within the area bounded by  
23 the green line and the area bounded by the yellow line, perhaps  
24 not that much by the area bounded by the red line. So, there was  
25 a proposal brought by the Playa de Añasco Fisher's Association to  
26 actually close the shallower areas year round while opening the  
27 deeper areas to allow commercial fishing for deep water snappers  
28 and groupers within this area, which could be a way of zoning  
29 within this marine managed area for the benefit of both the  
30 threatened species and the commercial fishery.

31  
32 And that's all I've got. Any questions or comments? And thank you  
33 for your time again.

34  
35 **VANCE VICENTE:** Yeah, I have a quick one question. Again, thanks  
36 for your presentation. You mentioned a lot about the critical  
37 habitats. You defined them very well. But how about the essential  
38 fish habitats? Where are you finding the young ones? Mangrove area,  
39 mangrove root area, shallow sea grass beds, and at what distance  
40 from the spawning grounds?

41  
42 **MICHELLE SCHÄRER-UMPIERRE:** Yeah, that's actually a good question,  
43 and it's important to note that the legal definition of critical  
44 habitat under the Endangered Species Act, which is something that's  
45 going to come up in December final rule, is different from the  
46 essential fish habitat that the Council manages in the Fishery  
47 Management Plan. So, critical habitat under ESA applies for the  
48 juveniles, applies for the larvae, applies for the adults, and

1 applies for the spawning stock. While essential fish habitat and  
2 actually the habitat areas of particular concern in the Fishery  
3 Management Plan are defined differently, right? And Graciela can  
4 help us to explore those difference better, because that's her  
5 area of expertise.

6  
7 But the juveniles of the previous report that I presented at the  
8 beginning, those are being identified mostly in seagrass for the  
9 really young of the year fish that we are seeing. So, the fish  
10 that were spawned in January, February, or March of this year, we  
11 see them in the summer at 20 cm, sorry, yeah, smaller than 20 cm.  
12 And we see those mostly in seagrass areas. As they begin growing,  
13 they start moving into shallow reef habitats.

14  
15 So, hopefully, that's something that will be captured in the  
16 critical habitat designation that comes out in December. But we  
17 don't have that to evaluate right now.

18  
19 **VANCE VICENTE:** Thank you, Michelle. Richard?

20  
21 **RICHARD APPELDOORN:** Yeah, I was going to comment on something  
22 totally different, but I think pertinent to what the SSC and the  
23 Council need to think about. And that is whether fish were  
24 migrating on and off of Bajo for the spawning aggregation. And we  
25 tried to-- or Evan tried to look at that in a couple of ways and  
26 one is to look at movements in that direction from the hydrophones  
27 that were placed on the bank.

28  
29 So, that Southern, you know, in that graph there, the lower left  
30 blue spot there is one area that gets just shallow enough to put  
31 a hydrophone on. So, we had one there. And if you go further south  
32 from there, outside the box, you'll see kind of an area of whitish  
33 pixels. That's another kind of raised area, much deeper and then  
34 if you go further south, you get into the shelf of Puerto Rico  
35 proper. So, we tried to put-- Well, we did put hydrophones  
36 suspended in the water over that shallow spot, hoping to be able  
37 to detect if, we're thinking if fish are migrating on and off,  
38 they would use that habitat corridor as the most likely pathway.  
39 Unfortunately, the currents there were really strong and although  
40 we, I guess, wisely took some old expendable hydrophones to put  
41 out there, they, in fact, were expended. So, we never got the data  
42 back to try and do that.

43  
44 But we did have fish that, you know, migrated toward that southern  
45 point and would stay there for just a little while. And then they  
46 would disappear as if they were moving further south, but they  
47 could have just gone into deeper waters or someplace else. Even if  
48 we picked them up in a subsequent aggregation, we were not able to

1 verify any of the fish leaving or coming from the Bajo de Sico  
2 area for that aggregation. So it's still an open question, is that  
3 we had some suggestions that this may occur but that's the best  
4 level of evidence and still open question.

5  
6 **VANCE VICENTE:** Thank you. Richard. Any other comment or question?

7  
8 Well, if not, it is 12:30 and I call for lunch time until 1:30. If  
9 everybody agrees, well, we'll meet back at 1:30. Thanks everybody—  
10 Walter, come on.

11  
12 **WALTER KEITHLY:** Yes.

13  
14 **GRACIELA GARCÍA-MOLINER:** Sorry, Walter, lunch time.

15  
16 **VANCE VICENTE:** Yeah, or make it very quick.

17  
18 **WALTER KEITHLY:** No, that's okay. Thank you.

19  
20 **VANCE VICENTE:** Any question? Well, we'll be back at 1:30. Bye.

21  
22 (Whereupon, the meeting recessed for lunch on September 27, 2023.)

23  
24 - - -

25  
26 SEPTEMBER 27, 2023

27  
28 WEDNESDAY AFTERNOON SESSION

29  
30 - - -

31 **Research Priority Updates**

32  
33 **VANCE VICENTE:** Hello, good afternoon. This is Vance Vicente, SSC  
34 Chair. We're beginning to initiate the afternoon session of the  
35 September 27, 2023, SSC meeting. We will start the afternoon  
36 section with the SSC recommendations. Made during May 1 to the 5<sup>th</sup>  
37 of 2023 as part of the SSC EBFM TAP meeting. So first, we want to  
38 go through the topics that were suggested for further research.  
39 These are the EBFM TAP research recommendations.

40  
41 I don't know how you want to go about this. I think that we should  
42 really look at the list. We don't want to spend too much time  
43 reading it. We probably all know it by memory. And then, second,  
44 how are we going to centrifuge the different research priorities  
45 into a simplified form. I have some ideas of how to go about this,  
46 but I would like to hear what your opinions are.

47  
48 The EBFM TAP Research Recommendations are eight. And these are

1 divided. One, to develop species and habitat climate vulnerability  
2 indices for the U. S. Caribbean. Two, EBFM reference points for  
3 using the fisheries management decision support system in the U.S.  
4 Caribbean. Three, by catch discards research. Four, restoration.  
5 Five, assess the ecological sustainability of managing herbivores  
6 and ecosystem within the U.S. Caribbean and identify important  
7 ecosystem indicators for those species and associated habitat.  
8 Six, quantify positive and negative effects of sargassum as  
9 critical habitat and effects of inundation on local fisheries.  
10 Seven, research to guide best strategies for adaptive fisheries  
11 management in the U.S. Caribbean. And eight, the human dimensions  
12 aspects, such as identifying socioeconomic factors to design a  
13 survey or surveys, to systematically collect data to inform social  
14 impact assessments in the context of management strategies, and  
15 system stressors, such as hurricanes and sargassum.

16  
17 The SSC research recommendations of the May 1 to the 5<sup>th</sup> joint  
18 meeting, SSC EBFM TAP meeting. I tried to centrifuge this, reduce  
19 it, try to summarize in a more readable, quick way. I think that  
20 there are the following topics. The first topic, fisheries landing  
21 data. The second topic, collection of biological data for life  
22 history population parameters. Topic three, effort estimation.  
23 Topic four, prepare for the (h)(2) flexibilities. Topic five,  
24 monitoring and surveys. Topic six, socioeconomic data for  
25 management. Topic 7, EBFM mapping. Topic 8, EBFM, assessing  
26 regulatory impacts. Topic 9, status of species in seasonally closed  
27 areas. Topic 10, status of species other, which is the status of  
28 species within the no take areas, such as the Hind Bank, no take  
29 areas, etcetera. Topic 11, shifts in fishing practices. And then,  
30 we went back during the discussion of the May meeting, the status  
31 of species order, specifically what is the status of the yellowtail  
32 snapper, status of queen conch, status of spiny lobster and queen  
33 conch. And that's the list.

34  
35 Then I added what are the Caribbean Fisheries Management Council  
36 2022 to 2026 strategic plan. And I don't know whether you have  
37 gone over it, but many of these proposed research priorities fall  
38 under the Council strategic plan for the 2022 to the 2026 time  
39 period. I think that one way that we can analyze this better and  
40 more focused is to take each of the topics or research priorities  
41 and see which ones fall under the Caribbean Fisheries Management  
42 Council's strategic plan. Which for Puerto Rico, there are four.  
43 Which are, strategy 1, improve fishery independent data through  
44 partnership. Strategy 1.2, prioritize data collection for species  
45 subject to seasonal and area closure. Strategy 1.3, expand  
46 education and outreach on commercial electronic reporting.  
47 Strategy 1.4, continue participation in re-initiation of the  
48 Marine Recreational Information Program. 1.5, support Southeast

1 Fisheries Science Center and Department of Natural Resources of  
2 Puerto Rico for improvements to commercial landing sampling. And  
3 1.6, support the SEFSC, Southeast Fisheries Science Center,  
4 fishery-independent deep-water snapper-grouper survey. Strategy  
5 1.7, support local government efforts to increase port sampling at  
6 port areas.

7  
8 Saint Thomas/Saint John's Strategies. Supports NOAA fisheries and  
9 U.S. Virgin Islands Department of Planning and Natural Resources  
10 efforts to improve recreational reporting. Strategy 1.9, under  
11 Saint Thomas/Saint John's Strategy, support the Southeast  
12 Fisheries Science Center efforts to work with DPNR to design and  
13 implement a multi-mode catch sampling program. Strategy 1.10,  
14 prioritize data collection of species subject to seasonal and area  
15 closures. Strategy 1.11, support U.S.V.I. DPNR efforts to examine  
16 licensing modifications and improvement.

17  
18 In the Saint Croix strategies. Strategy 1.12, support NOAA  
19 Fisheries and U.S.V.I. DPNR efforts to improve recreational  
20 reporting, port sampling, and review previous pilot efforts to  
21 establish an MRIP. Strategy 1.13, support efforts by U.S.V.I. DPNR  
22 to review and modify licensing requirements. Strategy 1.14,  
23 support the Southeast Fisheries Science Center efforts to work  
24 with U.S.V.I. DPNR to design and implement a multi-mode catch  
25 sampling program. Strategy 1.15, collaborate with U.S.V.I. DPNR on  
26 education and outreach regarding accurate catch reporting.  
27 Strategy 1.16, prioritized data collection for species subject to  
28 seasonal and area closures again. And strategy 1.17, support  
29 U.S.V.I. DPNR efforts to modernize and improve the licensing  
30 system.

31  
32 So going through all this long list of research priorities and the  
33 Council's strategic plan I suggest taking each of the priorities  
34 and see where they fit regarding the priority plan. As you can see  
35 the aspect of evaluating what is the effect of closure area, either  
36 seasonal or permanent is in all three priorities of the Council  
37 and we all agree, in the previous meeting, that this is a major  
38 thing to look at, especially for the benefit of the fishers, which  
39 continuously ask how effective our these closure areas, how  
40 effective they have been in restoring the fisheries species  
41 population, as well as specific species.

42  
43 So, I don't know, that's my suggestion to begin synthesizing the  
44 research priorities. But I'm going to leave it open to the rest of  
45 the committee members to see what their plans are, if they have  
46 already reviewed this and give me your recommendations so that we  
47 can evaluate which will be the most proper procedure to follow in  
48 the re-evaluation of these research priorities.

1  
2 So, the floor is open.  
3  
4 **GRACIELA GARCÍA-MOLINER:** Okay. So, we're trying to get back to  
5 page one. Hello. Did we lose everyone?  
6  
7 Okay. So, Liajay or Cristina, who's driving the presentation, can  
8 we go back to page one?  
9  
10 **LIAJAY RIVERA GARCÍA:** Hi, Graciela. This is Liajay. This is page  
11 one.  
12  
13 **GRACIELA GARCÍA-MOLINER:** We are seeing topic twelve. We're seeing  
14 topic twelve. Status of species (other).  
15  
16 **LIAJAY RIVERA GARCÍA:** Okay.  
17  
18 **GRACIELA GARCÍA-MOLINER:** We need to go to EBFM TAP Research  
19 Recommendations May 1<sup>st</sup>. Which is page three of the document that  
20 that Graciela sent to all the SSC members.  
21  
22 **LIAJAY RIVERA GARCÍA:** Can you, sorry, I had my screen paused. Can  
23 you see it now?  
24  
25 **VANCE VICENTE:** Yes, that's it.  
26  
27 **LIAJAY RIVERA GARCÍA:** Perfect. Sorry about that.  
28  
29 **GRACIELA GARCÍA-MOLINER:** Thank you.  
30  
31 **VANCE VICENTE:** Well, again, good afternoon. Welcome back to the  
32 afternoon session of the September 27th SSC meeting. the topic for  
33 this afternoon is to discuss, go over the research priorities  
34 proposed by the EPFM TAP during the May 1<sup>st</sup> to May 5<sup>th</sup>, 2023, and  
35 the research priorities of the SSC also prepared during the  
36 aforementioned meeting.  
37  
38 I don't know whether you want me to read them over, at least the  
39 major topics, and then decide how we're going to condensate the  
40 different proposed research priorities some of which are very much  
41 congruent. Okay, Miguel.  
42  
43 **MIGUEL A. ROLÓN:** Buenas, Vance. The Council will receive money  
44 from the IRA Funding, Inflation Reduction Act. And this session  
45 this afternoon is what we are going to use to prioritize all the  
46 research possibilities of necessary projects in the next three  
47 years, starting in 2024 all the way to 2026 and maybe an extension  
48 to 2027. So, what we need from the SSC is for you to tell us, out

1 of those priorities, if you had the money to do it in the next  
2 three years, which one do you consider as SSC members from the  
3 TAP-- we will have a subcommittee actually. The chair of the SSC,  
4 the chair of the TAP, Graciela, myself, and people from the Center  
5 will be at this committee that will put together the proposals  
6 that are going to be submitted to the National Marine Fisheries  
7 Service.

8  
9 So, what the Council needs, at this time, from the SSC is to look  
10 at the strategic plan recommendations, exactly what you just read,  
11 and look at the SSC and the TAP and please tell us which one you  
12 consider the top top priorities if we get the monies in the next  
13 three years to establish projects that will carry on those  
14 priorities.

15  
16 For example, at the last meeting of the Council, Kevin McCarthy  
17 told us that there are some projects that have been done to collect  
18 information in Puerto Rico. He would like to move or extend that  
19 to the U.S. Virgin Islands as well. So, that will be one priority  
20 that we are going to be considering. So, thank you, Vance. Just  
21 that.

22  
23 If the SSC can provide those recommendations, let's say that you,  
24 out of all the recommendations that you have here, you can identify  
25 the top five and top seven-- top five and top ten so we can use it  
26 for the development of those projects. To give you an idea, the  
27 National Marine Fisheries Service is going to give us the go ahead  
28 in October, and then we are supposed to submit the proposals no  
29 later than September 30, 2024. We already have a coordinator to  
30 work on those proposals, etcetera. More information will be coming  
31 at the December meeting. Thank you, Vance.

32  
33 **VANCE VICENTE:** Okay, thank you, Miguel. We'll do. Let's hear from  
34 Richard-- I mean Tarsila. From Tarsila first, and then Richard  
35 Appeldoorn.

36  
37 **TARSILA SEARA:** I think Miguel kind of answered my question, but  
38 what I was going to ask is exactly what we're looking for here as  
39 a product. Is it to consolidate all of these into just one set of  
40 recommendations from the SSC, just so I can have an idea of what  
41 exactly we're trying to do? That was my question and then I was  
42 also just going to suggest, if it's helpful, I think for the social  
43 economic data, what we have in the EBFM TAP recommendations and  
44 for the SSC there, to me they are essentially the same. So, we  
45 could just consolidate that into easily into just one.

46  
47 **VANCE VICENTE:** Okay, Richard.

48

1 **RICHARD APPELDOORN:** Yeah, thanks, Vance. I'm sure you all remember  
2 last time we dealt with this we were trying to consolidate  
3 everything, so things that sounded similar were all being put  
4 together, and it's the thing that we didn't finish. So, I'm not  
5 sure which list you were presenting from the SSC, the consolidated  
6 list or the unconsolidated list.

7  
8 Secondly, these are questions really for Miguel, so I was going to  
9 ask, okay, just how many do you want? So, he said top five, top  
10 ten, and that's good. So second question following that, in  
11 priority or just top five and top ten? And lastly, we are looking  
12 at a number of things that range from really needed, but long term  
13 to things that are short term and needed, does the Council have  
14 any preference on how we think about this?

15  
16 Because I would certainly say, I would like to see some long-term  
17 things start getting on the books. Socioeconomic information being  
18 one of them. And then better ways to collect work sampling data  
19 actually implemented. But those are going to take time to put  
20 together. And there are some other things that are fairly short  
21 term that we could do. So, are we looking for a mix of those kinds  
22 of things, or just something we can do in the next three years and  
23 that'll be the end of it.

24  
25 **JASON COPE:** Sort of along the lines of what rich is asking. To  
26 me, it sounds like we're being asked to look over this list with  
27 the thought of what could be funded. That's different than making  
28 a big list of things that we think should be done in general. And  
29 so maybe a clarification, when looking through this list, are we  
30 trying to prioritize things for this very particular time frame of  
31 funding, or are we trying to rank them just in general about what  
32 we think is most needed at this time. Thanks.

33  
34 **VANCE VICENTE:** Yeah, thank you, Jason. Let me answer one of the  
35 questions real quickly. We already rank each of the topics and  
36 research priorities from a one to a three. That's what the red  
37 number refers to on each of the topic and research priorities. So,  
38 we have done that job. I think that now what I suggest is to look  
39 at what are the Council's priorities and which ones fall under  
40 what category under the Council's priority do they falling in.

41  
42 For example, right from the bat, I can see that there are several  
43 topics. Which the SSC prepare, which really emphasize the  
44 evaluation of closed fishing areas, whether seasonal or  
45 permanently. So, what we can do right now, I mean, is cut and paste  
46 those high priority topics, research priorities, and place them  
47 under the Council's priorities and see how many of that we can  
48 condensate maybe into a paragraph instead of having the different

1 topics.

2  
3 We have to separate them by topic in order to have a focus or give  
4 focused opinions about them because we don't want to lump them. I  
5 tried to lump them, but then we had to go one by one and segment  
6 it so we can look at specifically what kind of research would be  
7 necessary to address the various topics.

8  
9 So that's one way that we can reduce the list. That is,  
10 synthesizing which of the topics fall under the evaluation of  
11 closed areas, which are in all of the Council's priorities. When  
12 I say all, that means for the island-based Puerto Rico FMP, Saint  
13 Croix, Saint Thomas and Saint John. In all of them the Council has  
14 that priority. So, the evaluation of close areas of fisheries in  
15 general, as well as very specific species. So, that will cut down  
16 significantly the number, the numerical aspect of the topics.

17  
18 The other is the recreational fisheries, which also are emphasized  
19 in all of the Council's priority for all of the regions. That way  
20 I think that we can start centrifuging and synthesizing the  
21 research program that we're proposing to the Council, so that the  
22 Council can look at them in a more general way and make the proper  
23 allocation of resources depending on what the Council decides,  
24 what then their priorities will be after we do this homework. It's  
25 a suggestion, but I want to just open it for the rest of the  
26 committee members to see what they think or if they have a better  
27 idea of how to deal with this.

28  
29 But these are the list that both the EBFM TAP and the SSC decided  
30 bolted on and evaluated during the May 1 to May 5<sup>th</sup> meeting. So,  
31 from here we can cut down and resume, but it's important that we  
32 refresh our minds of what were the major research topics and how  
33 they were evaluated. And then from there, well, now we can answer  
34 Miguel's question and focus more on the future Council's  
35 priorities, depending on their meeting this afternoon.

36  
37 J.J.

38  
39 **JUAN J. CURZ MOTTA:** I think a vast proposition is very  
40 interesting. Totally agree with that. The only concern that I have  
41 is I don't know if we have enough time to go through that process  
42 this afternoon. And the second thing is if the rest of the group  
43 is ready to hear concrete suggestions about priorities from the  
44 members I would be prepared to do so. Thank you.

45  
46 **LIAJAY RIVERA GARCÍA:** Mr. Chair you do have a comment from Miguel  
47 Rolón, and it says, "We both, a short list for the of priorities  
48 for the IRA funds and the list of priorities that are needed for

1 money.”

2  
3 **VANCE VICENTE:** I'm sorry, we could not hear you at the beginning.  
4 Yeah, we cannot hear you. Can you speak louder, or do we have to  
5 increase the volume here?

6  
7 **LIAJAY RIVERA GARCÍA:** I'm sorry, can you hear me now? I'm having  
8 audio issues on my side.

9  
10 **KIARA M. MATÍAS ROJAS:** Yeah, we can hear you.

11  
12 **LIAJAY RIVERA GARCÍA:** Yeah, I was reading out loud Miguel's  
13 answers regarding the list. Miguel Rolón wrote, “We need both, a  
14 short list of priorities for the IRA funds and the list of  
15 priorities that are needed for monitoring the FMPs, etcetera.”

16  
17 **VANCE VICENTE:** Okay. Thank you. Any other comment? No other  
18 comment?

19  
20 **LIAJAY RIVERA GARCÍA:** No, that was all, Mr. Chair.

21  
22 **VANCE VICENTE:** I will start with priorities, research priorities  
23 focusing on what the effect has been of closed fishing areas,  
24 whether it's seasonal or permanent, that's a very valid question  
25 that the primary stakeholder, the fishers have been requesting.  
26 You have closed all these areas. What do they mean? How effective  
27 have they been in restoring the fisheries population within that  
28 area or outside the closed areas. That should be a top priority.  
29 I mean, it is in fact, in all of the Council's priorities for the  
30 '22-'24 and island-based fisheries of the three regions. So, that's  
31 right on top of my head. I mean, that would be a top priority. So,  
32 studies research proposed to evaluate the effectiveness of closed  
33 areas, whether seasonally or permanent, on the fisheries  
34 population, both within the closed areas and outside the closed  
35 area. Right off the bat, that's one that I can think of.

36  
37 The second one would be to select those research priorities that  
38 deal with the recreational aspects of the three regions. It's also  
39 a priority of the Council for the three regions to improve data  
40 collection and recreational activities. That's, from what I can  
41 see up to now, those two should be two top priorities. I haven't  
42 done much thinking, I just figured this out last night, how to  
43 deal with this. The idea came up. I started consolidating the idea  
44 the earlier this morning. I don't know, let's bring a discussion  
45 out of that to see what you think. J.J?

46  
47 **JUAN J. CURZ MOTTA:** Thank you, Mr. Chair. I would like to propose  
48 that the top two priorities are related to data collection. I

1 totally agree with the testing about the effectiveness of the  
2 managed areas is really important. However, what's going to allow  
3 us to do that is having the proper data to do so. So, my suggestion  
4 for the committee would be to put that top priority, everything  
5 that is related to data collection, whether it's fisheries-  
6 dependent or fisheries-independent. I strongly believe that we  
7 need to improve drastically the port surveys or the way we're  
8 collecting that fisheries-dependent data. So, I would propose to  
9 the committee that data collection will be a top priority as  
10 everything else will fit and will benefit from that. On that same  
11 token, within this priority, I would like to emphasize that the  
12 collection of socioeconomic data be included in a routinary manner  
13 if we accept this priority from now on.

14  
15 So that would be my two suggestions and recommendations. One,  
16 everything that has to do with data collection should be a top  
17 priority. And the second is including and initiate the collection  
18 of socioeconomic data. Thank you.

19  
20 **VANCE VICENTE:** Thank you. A comment and then Erik. My comment is,  
21 sure, data collation is a priority, but I mean, that's too broad.  
22 We need to break it down, as we already spent so many hours in  
23 trying to break it down into specific, the type of data collation  
24 that needs to be collected. I mean, data collation should be  
25 focused on the specific aspect, like the effect of data to be  
26 collected on areas that have been closed for decades now. But too  
27 broad, just data collection in general, I would focus it, but we  
28 can discuss that later. Erik?

29  
30 **ERIK H. WILLIAMS:** Yeah, thank you, Mr. Chair. This is Erik  
31 Williams. I actually, I kind of heard what J.J. was saying and I  
32 completely agree with everything that he was saying. Data  
33 collection is it. And I think what I was hearing from him, and I  
34 would agree with him is if you sort of drill down into the data  
35 collection, which is what you're asking, Vance, I think we need to  
36 prioritize getting sort of fishery removals. So, we would need to  
37 get a handle on how many fish are being taken out of the water,  
38 and that includes commercial and recreational, it includes  
39 discards all of that, and we definitely have holes in all of those  
40 sectors, so we need to fill those.

41  
42 I think the other thing J.J. was mentioning was fishery-  
43 independent, which would be survey data. I think that's critical  
44 as well. Once you get those two things in line, you are well set  
45 up for stock assessment models, population models, all of that  
46 monitoring stuff comes from that essentially. So, once you get  
47 your removals and once you get some sort of survey, index of  
48 abundance or something along those lines, you are three quarters

1 of the way there in fisheries management. And it's just a matter  
2 of analyzing all that data.

3  
4 And I would agree with J.J., the socioeconomic data shouldn't be  
5 left out of that as well. You know, a stock assessment person  
6 always puts that, sort of, secondary but, you know, maybe there is  
7 a way to bump that up in priority. I think that's what J.J. was  
8 getting at, and I hope that helps clarify.

9  
10 **VANCE VICENTE:** Yeah, thank you, Erik. Just a brief comment. The  
11 thing is that we spend a lot of time and resources in cracking it  
12 down, which is what the list that I listed down. We did that part  
13 of the homework. My approach will be, what is the best use of this  
14 list? Which one can be eliminated based by the ranking numbers or  
15 based that they're not under any of the Caribbean Fishery  
16 Management Council priorities for the next few years. But, fine,  
17 we went through this already and going through them again, I  
18 believe that the Scientific and Statistic Committee members are  
19 going to lynch me, because they have gone through this so many  
20 times and so often that we really need to further crack it down  
21 and start making decisions whether we're going to be using those  
22 priorities that rank less, specifically those between one and two,  
23 and select those that are three and which of those research  
24 priorities that are three are compatible with the Council's  
25 strategic plan for the next few years. That's just my comment.

26  
27 Richard, Michelle, and then Miguel.

28  
29 **RICHARD APPELDOORN:** Okay. Let me just pull up the list here. So,  
30 here's my top ten-ish. I'm agreeing with a lot of what people have  
31 already said. So, landings data points one and two, which are the  
32 same thing, one is for Puerto Rico, one is for the Virgin Islands,  
33 and that's to improve the landings data based on the port sampling  
34 studies.

35  
36 The next one is Topic 3, Effort Estimation. My next one is Prepare  
37 for (h)(2) Flexibilities. Monitoring and Surveys, especially,  
38 point 1 is, you know, let's do the surveys. Recreational Data,  
39 wherever that is. Socioeconomic Data, point 1. Let's start getting  
40 some systematic collection of information, so we have baselines  
41 for which we could start maybe looking at 2 and 3. And then from  
42 the EBFM TAP group, their recommendation on climate change and  
43 their recommendation on EBFM reference points. And I also believe  
44 the life history stuff, but I was only allowed 10. Those are my  
45 top ten-ish.

46  
47 **VANCE VICENTE:** Miguel, please come in.

48

1 **MIGUEL A. ROLÓN:** Thank you, Vance. That's exactly what I was going  
2 to ask. The idea is not to rework the priority list that you  
3 already have, because you took a lot of time, a lot of thinking  
4 about it. It's just to do what Richard just did. Out of the list  
5 that we already have, take the top ten. And then, if the group  
6 agrees, then you, as Chair, can present that to the Council, not  
7 at the December meeting, but a meeting that we are going to have  
8 before the December meeting to look at the list of possible breaks  
9 that we are going to undertake.

10  
11 The other thing is that this managed strategic plan was approved  
12 by the Council, has been sent to National Marine Fisheries  
13 Services, so everybody has an idea of what it is and if we had the  
14 exercise following the example of what Richard just did, that would  
15 do the trick for the Council. Thank you.

16  
17 **VANCE VICENTE:** Thank you very much, Miguel. Richard.

18  
19 **RICHARD APPELDOORN:** This is Richard again. Yeah, I'm not sure I  
20 read off on my list of closed area impacts or not. So, that's was  
21 on my list, I'm just not sure I read it off. That's all.

22  
23 **VANCE VICENTE:** Okay, so Richard, you just went through the SSC  
24 research recommendations. Can you repeat which are the topics that  
25 you give priority right now? You said topic one, which is fisheries  
26 landing data.

27  
28 **RICHARD APPELDOORN:** Okay, hang on, I need to pull up the list.

29  
30 **VANCE VICENTE:** Yeah, let's go over it because I'm making notes on  
31 this.

32  
33 **RICHARD APPELDOORN:** Okay, in topic one, fisheries landing data,  
34 items one and two, which are essentially the same thing. One is  
35 for Puerto Rico, one is for the Virgin Islands.

36  
37 **VANCE VICENTE:** Okay, right. Okay, that's one and two, okay. I got  
38 that.

39  
40 **RICHARD APPELDOORN:** Next one is Topic 3, effort estimation.

41  
42 **VANCE VICENTE:** Hold on. Okay, topic 3, yes.

43  
44 **RICHARD APPELDOORN:** Okay, topic 4 is prepare for (h)(2)  
45 flexibilities. I think if I had to pick between one or two, I'd go  
46 with one. I think section 3 is going to come up later anyway.

47  
48 **VANCE VICENTE:** Can you repeat what you said? I can barely hear

1 you. Get close to the microphone, please.  
2  
3 **RICHARD APPELDOORN:** On topic 4--  
4  
5 **VANCE VICENTE:** Yes.  
6  
7 **RICHARD APPELDOORN:** --I would go for, actually, 1 or 2 would be  
8 fine. I guess I would go with 1.  
9  
10 **VANCE VICENTE:** Okay, 1.  
11  
12 **RICHARD APPELDOORN:** Well, 1 or 2. I'll leave it at that.  
13  
14 **VANCE VICENTE:** Okay, let me-- I'm underlining this, number 2.  
15  
16 **RICHARD APPELDOORN:** Well, I guess one is the one that is most  
17 directly related to the topic, so I'll go with one.  
18  
19 **VANCE VICENTE:** Okay, I put one or two. Okay. What's next?  
20  
21 **RICHARD APPELDOORN:** Number five, topic monitoring and surveys. I  
22 don't restrict that to closed fishing areas. We need that, but we  
23 just need fishery independent data.  
24  
25 **VANCE VICENTE:** Okay, so monitoring program of the fish populations  
26 in closed fishing areas, cooperative fisheries-based survey, and  
27 two is train and delegate fishers. Any those two specifically you  
28 give priority?  
29  
30 **RICHARD APPELDOORN:** Well, I give it to cooperative fishing because  
31 that's actually doing the surveys, but I would not restrict it to  
32 closed fishing areas, even though I know we've said that.  
33  
34 **VANCE VICENTE:** Oh, okay. Yeah, but that, later on, we divide that  
35 into a seasonally close and a permanently close fishing area, so  
36 that's-- Okay.  
37  
38 **RICHARD APPELDOORN:** No, I'm just saying we need fishery-  
39 independent surveys. That's my point.  
40  
41 **VANCE VICENTE:** Fishery independent, you said?  
42  
43 **RICHARD APPELDOORN:** Yeah, that's what monitoring surveys are.  
44  
45 **VANCE VICENTE:** Okay.  
46  
47 **RICHARD APPELDOORN:** Socioeconomic. So, that's topic six, number  
48 one.

1  
2 **VANCE VICENTE:** Okay.  
3  
4 **RICHARD APPELDOORN:** Topic 8, number 1.  
5  
6 **VANCE VICENTE:** Okay.  
7  
8 **RICHARD APPELDOORN:** And then under the EBFM TAP,  
9  
10 **VANCE VICENTE:** Where? Are you talking about Topic 7? EBFM mapping  
11 or what?  
12  
13 **RICHARD APPELDOORN:** No, I'm going to the EBFM TAP recommendations.  
14  
15 **VANCE VICENTE:** Oh, okay, okay. That's the previous page. Hold on,  
16 let me go back.  
17  
18 **RICHARD APPELDOORN:** Yeah, it's the top of the list.  
19  
20 **VANCE VICENTE:** Yeah, okay. EBFM TAP research. Yes, go ahead.  
21  
22 **RICHARD APPELDOORN:** Number one and number two.  
23  
24 **VANCE VICENTE:** Okay. One. Got it.  
25  
26 **RICHARD APPELDOORN:** And I'm not sure where recreational fisheries  
27 was, but somewhere in one of the lists.  
28  
29 **VANCE VICENTE:** Let me see. Hold on, let me check. Recreational,  
30 let me see. I think it's a... Yeah. I highlighted it, I can find  
31 it now. Oh, let me see, hold on.  
32  
33 Oh, it's under by, under bycatch discards research. A, is research  
34 to better characterize and quantify bycatch and discards  
35 associated with fisheries in the U.S. Caribbean, both commercial  
36 and recreational.  
37  
38 **RICHARD APPELDOORN:** No, that's not what I want. I want data  
39 collection on the recreational fisheries.  
40  
41 **VANCE VICENTE:** I know, I know. I thought-- Yes, I know, I thought  
42 that we had come up. I don't. Yeah, that's-- Let me see where.  
43  
44 **RICHARD APPELDOORN:** Maybe it was on the Council list, and that's  
45 fine. I'll draw it from there.  
46  
47 **VANCE VICENTE:** Let me see, hold on. Recreational. Hold on.  
48 Recreational. Yeah, recreational is under Topic 12 of the SSC, on

1 the status of the spiny lobster. That's topic 12, number 3. The  
2 status of the spiny lobster and queen conch population, both have  
3 a catch restriction when there is no information on the compliance  
4 of the recreational sector.

5  
6 **RICHARD APPELDOORN:** Well, I know you don't want us to invent new  
7 priorities, but I'm doing that.

8  
9 **VANCE VICENTE:** Okay.

10  
11 **RICHARD APPELDOORN:** But it was one of the ones under the Council  
12 priorities.

13  
14 **VANCE VICENTE:** Yes under, yeah, it's, yes, in, yes. For both, for  
15 Puerto Rico strategies, yes, section 1.4, referring to the  
16 Caribbean Fisheries Management Council Strategic Plan.

17  
18 In section 1.4, specifically, it says, continue participation in  
19 re-initiation of the Marine Recreational Information Program  
20 (MRIP) in Puerto Rico. And for Saint Thomas/Saint John, it's  
21 strategy 1.8, support NOAA Fisheries and U.S. Virgin Islands  
22 Department of Planning and Resources efforts to improve  
23 recreational reporting and establish an MRIP survey in Saint  
24 Thomas/Saint John. In Saint Croix, it's strategy number 1.12.  
25 Support NOAA fisheries and U.S.V.I. efforts to improve  
26 recreational reporting. So, it is in all three of them.

27  
28 Yeah, but we don't have it as a major topic, recreational  
29 fisheries. We have it as a subtopic.

30  
31 **RICHARD APPELDOORN:** Well, to the degree that we're also allowed  
32 to draw on the Council list, that's what I'm doing. If we're not  
33 allowed to do that, then I want more life history information.

34  
35 **VANCE VICENTE:** That's okay, let me go back to-- So, life history,  
36 I don't see that in the EBFM TAP. I don't see life history  
37 information here. So...

38  
39 **RICHARD APPELDOORN:** Yeah, it's there.

40  
41 **VANCE VICENTE:** So, let me see.

42  
43 **GRACIELA GARCÍA-MOLINER:** Mr. Chair, if I may, Graciela here. So,  
44 Michelle sent a comment in the chat. "Fisheries landing includes  
45 recreational and commercial, which is part of what you discussed  
46 at the last meeting."

47  
48 **VANCE VICENTE:** Okay, J.J.

1  
2 **JUAN J. CURZ MOTTA:** Yeah, thank you. I have a question and then  
3 a comment. The thing is, I got disconnected in a very important  
4 process that was Rich developing a ranking list. The question is—  
5  
6 **VANCE VICENTE:** J.J., J.J., excuse me, get close to the microphone  
7 and repeat because we cannot hear you very well here.  
8  
9 **JUAN J. CURZ MOTTA:** What about now? Can you hear me better?  
10  
11 **VANCE VICENTE:** Yeah, a little bit better.  
12  
13 **JUAN J. CURZ MOTTA:** Yeah, no, what I was saying is that I just  
14 got disconnected when Rich was doing the list of the ranking list.  
15 I was wondering if perhaps Liajay would prefer a list, you know,  
16 a document with that list that we can have a detailed look and  
17 comment on it. That's the question.  
18  
19 And then a comment based on what I just heard at the end about  
20 recreational data. I totally agree with Michelle's comment that if  
21 we improve landings data, that will have to include recreational  
22 data. Thank you.  
23  
24 **VANCE VICENTE:** Thank you, J.J.  
25  
26 All right. I'm sorry, I had the microphone off. Let's see if I  
27 remember what I said. Yes, I agree with Richard that the  
28 recreational fisheries as a major topic assessment, you know,  
29 should be at the top. And then under recreational fisheries, the  
30 very specific subtopics that do address, both, the EBFM TAP  
31 recommendation and our SSC recommendations. But I think that that  
32 should be a major topic. Let me take a note on that.  
33  
34 Okay, Richard.  
35  
36 **RICHARD APPELDOORN:** Yeah, following J.J.'s comment, do you want  
37 me to present a list and I can send it to Liajay or Graciela or  
38 somebody?  
39  
40 **VANCE VICENTE:** Yes, please send it to Graciela, please.  
41  
42 **RICHARD APPELDOORN:** Okay.  
43  
44 **VANCE VICENTE:** Any other thoughts? Well, we'll wait until Richard  
45 gets that list and then we can go back to the discussion.  
46  
47 Michelle, go ahead.  
48

1 **MICHELLE SCHÄRER-UMPIERRE:** Yeah, thank you, Mr. Chair. This is  
2 Michelle Schärer, for the record. I was just circling back to the  
3 comment that Miguel put in the chat. So, of these topics... which  
4 ones, practically, do we see as three-year projects that could get  
5 completed and which ones do we see as ongoing monitoring that needs  
6 to happen throughout the life of the fishery management plans and  
7 I think that way it'll be easier to maybe visualize, you know,  
8 where are the investments, for example, in pilot projects that  
9 give us the design that later will become a long-term monitoring  
10 project. Structuring it that way, always keeping in mind the  
11 priorities of evaluating fish removals and having surveys and also  
12 having important social economic data, but some of these things,  
13 if we just throw them out there, like priorities, and don't really  
14 have the vision of what things are going to build on what things  
15 we may lose opportunities, that's all.

16  
17 **VANCE VICENTE:** No, that's a very good point. I think we can do  
18 it, but we have not broken down the topics into those that have  
19 been short term that are ongoing, and which ones should be  
20 initiated, or what. We have not broken them down under those terms,  
21 so that means that we have to go and look at each of them and see  
22 which one fall under which category. So, in the meantime, we'll  
23 see what Richard sends me.

24  
25 **MICHELLE SCHÄRER-UMPIERRE:** Yeah, I would argue that anything that  
26 says to improve or to continue or to enhance something we're  
27 already doing, would be a longer-term priority for FMP monitoring.  
28 And the things that are sort of more groundbreaking, different  
29 ways of looking at things, those would be a shorter-term, three-  
30 year project to then use that input onto adapting the things that  
31 are doing long term. So, I think that's in there. It's a matter of  
32 maybe having two columns in a table and separating out, based on  
33 what Rich proposed, if anybody has an argument for something that  
34 isn't in there that needs to be in there, to put it into those  
35 two, maybe side by side columns, so that we know which things are  
36 more short-term, let's say, pilot projects and which ones are  
37 actually investments and continuing to do what we're doing, just  
38 applying new knowledge to make them more useful in the work we do  
39 here.

40  
41 **VANCE VICENTE:** No, I agree that that's a very, very good  
42 suggestion, it goes straight to the point that Miguel brought up.  
43  
44 Michelle, if you can just make a draft table of what type of  
45 information do you think or how the information needs to be broken.  
46 If you can consolidate your thoughts and then send something to  
47 Graciela, a draft consolidating what you just said. Maybe a draft  
48 table of how you visualize how to do with this maybe this can help

1 accelerate things a lot. Thank you.  
2  
3 No, J.J., we're just thinking and waiting for Richard's and  
4 Michelle's.  
5  
6 So, in summary, for the time being, we have a list of priority  
7 topics which were proposed by Richard. One thing we can do, we can  
8 vote whether we agree that those should be the priorities for now  
9 to be submitted to the Council. And two, we need to do some homework  
10 regarding which of these proposals have been going on, for how  
11 long they have gone, or if they will start at any time. That's a  
12 criterion that Miguel asked us to do.  
13  
14 But in the meantime, if we can go over the priorities selected by  
15 Richard, which to me they make very much sense, if we can take a  
16 vote to accept those priorities, we can read them and then take a  
17 vote on them and see whether they should be the priorities, for  
18 the time being, to be submitted to the Council.  
19  
20 So, one of the research priorities that we're proposing to the  
21 Council would be topic number one, fisheries landing data, and  
22 under sub one, improve fisheries landing data for Puerto Rico based  
23 on PR port landing study. Develop statistic-based method for Puerto  
24 Rico. And two, improve fisheries landing data for the U.S. Virgin  
25 Islands upon completion of the U.S.V.I. port sampling study. And  
26 develop a statistic-based method for the U.S. Virgin Islands. So  
27 that's all that under topic one.  
28  
29 The next recommendation by Richard is effort estimation, which is  
30 topic three. Also, topic four, prepare for (h)(2) flexibilities.  
31 Simulation to test alternate ACLs for (h)(2) flexibility, or how  
32 to incorporate uncertainty into defining ABCs from OFLs. Also,  
33 number five. Topic five. Monitoring and surveys.  
34  
35 Also, topic six has been selected as a priority. Which is  
36 socioeconomic data for management. Topic six, and number one under  
37 topic six, periodic systematic collection of data to provide a  
38 baseline and a comparative basis for social impact assessments.  
39  
40 I also have here topic eight. EBFM, assessing regulatory impacts.  
41 Under topic eight, number one, evaluate effectiveness and impacts  
42 of closed areas. Then that's it for the SSC priorities. And then,  
43 going back to the EBFM TAP proposal, I have Richard proposing to  
44 establish as a priority, one, developed species and habitat climate  
45 vulnerability indices for the U.S. Caribbean. Two, EBFM reference  
46 points for using the fisheries management decision support system  
47 in the U.S. Caribbean.  
48

1 I don't see anything else here, unless I'm missing something. But  
2 also, we need to add specifically as a major topic, if I think I  
3 got Richard right, a major topic should be the evaluation of the  
4 recreational fisheries data.  
5  
6 J.J.  
7  
8 **JUAN J. CURZ MOTTA:** Yeah. Thank you, Mr. Chair. Question. Those  
9 are already around. I mean, they are in order of priorities.  
10  
11 **VANCE VICENTE:** Yeah. They're right.  
12  
13 **JUAN J. CURZ MOTTA:** Yeah. Thank you. So, can we make suggestions  
14 on the ranking now, Mr. Chair?  
15  
16 **VANCE VICENTE:** Another ranking, okay? This is a ranking from the  
17 ranking. Okay. So, if you want to put it more straight, these  
18 topics have already been ranked and have been selected by the SSC  
19 as major priorities to be proposed to the Council for  
20 consideration.  
21  
22 **JUAN J. CURZ MOTTA:** Yeah, the question is are they already  
23 reordered in terms of priorities? If so, I would like to make a  
24 suggestion.  
25  
26 **VANCE VICENTE:** I can barely hear you. I mean, your voice sounds  
27 very electronic. So, I cannot pick up what you're saying really  
28 well.  
29  
30 **JUAN J. CURZ MOTTA:** What about now, Vance?  
31  
32 **VANCE VICENTE:** Now, you sound normal.  
33  
34 **JUAN J. CURZ MOTTA:** I sound what?  
35  
36 **VANCE VICENTE:** Normal.  
37  
38 **JUAN J. CURZ MOTTA:** Okay, thank you. Question. The document that  
39 we're seeing on the screen, is that showing the proposed  
40 priorities? One, two, three, four, five or we haven't done that  
41 exercise yet.  
42  
43 **VANCE VICENTE:** That's what we're voting on. We already did that.  
44 Richard has proposed to the committee that this would be a short  
45 list or a shorter list of priorities to be submitted to the Council  
46 and I'm asking the committee if they agree. I just read them over.  
47 I just read them over to you and I am submitting them for voting  
48 so that we can get moving.

1  
2 **JUAN J. CURZ MOTTA:** Yeah, no, what I want to propose is to move  
3 the socioeconomic from number six to at least a number three.  
4 Please. If they are ranked.  
5  
6 **VANCE VICENTE:** Well, what Richard said, they're not in any  
7 specific rank order, okay?  
8  
9 **JUAN J. CURZ MOTTA:** Well, that was my previous question, Vance,  
10 and I understood the answer was yes.  
11  
12 **VANCE VICENTE:** Okay, I'm sorry. No, no, no. I wasn't understanding  
13 you. But no, the order has been selected based on the-- they're  
14 not in any ranking order. We have not done that. If you propose  
15 that we do that from the list that Richard proposed, if you want  
16 the committee to select what we rank as a top or bottom. But I  
17 think that's up to the Council. That's up to Miguel to decide.  
18 I'll say, all we want to do at this point, I believe, is to say,  
19 "Hey, we have looked at the research priorities that were proposed  
20 by the SSC and maybe EBFM TAP during the May 1<sup>st</sup> to May 5<sup>th</sup> meeting  
21 of 2023." And then the Council will say, "Hey, well, we think that  
22 this is a priority based on that meeting that they had this  
23 afternoon." But for the time being, I just want to submit a list.  
24 All I'm asking is whether we're ready to vote to accept Richard's  
25 proposed priorities. Not rank, okay, but just the list that we  
26 have from the 8, 11, 19 priorities that these are the ones that,  
27 in this meeting, we're proposing the Council to consider for  
28 evaluation.  
29  
30 So, unless there's any objection on this, I would like to ask  
31 somebody to propose a motion to approve the list.  
32  
33 **JUAN J. CURZ MOTTA:** Thanks for the clarification, Vance. Thank  
34 you.  
35  
36 **VANCE VICENTE:** Okay. So, any comments? Julian? Julian, you're  
37 next.  
38  
39 **JULIAN MAGRAS:** I just had a question. I'm not seeing the life  
40 history as one of the top items, and I know it was mentioned  
41 earlier, or am I not reading it right? So that was just my question.  
42  
43 **VANCE VICENTE:** Okay, if you can get close to the mic and speak  
44 louder, please, Julian repeat.  
45  
46 **JULIAN MAGRAS:** Yes, can you hear me now?  
47  
48 **VANCE VICENTE:** Nope. The same. Try to get closer to the mic.

1  
2 **JULIAN MAGRAS:** Yes, can you hear me now?  
3  
4 **VANCE VICENTE:** Okay, go ahead.  
5  
6 **JULIAN MAGRAS:** Yes, my question was, I'm not seeing the life  
7 history as part of the top priorities and it was mentioned earlier,  
8 or am I not reading it, right? So that was just a question, life  
9 history as being in the top 10. Thank you.  
10  
11 **VANCE VICENTE:** Thank you. I think the life history issue is  
12 important. I think life history parameters to be included as one  
13 of the priorities can be listed under one or more of the major  
14 topics that we're voting on.  
15  
16 Richard, if you heard Julian's proposal on the collection of  
17 biological parameters to be another top priority to be submitted  
18 by the SSC in this meeting. Do you agree?  
19  
20 **RICHARD APPELDOORN:** Yeah, I was going to have it on the list.  
21  
22 **VANCE VICENTE:** Thank you. So, is there a motion on the table to  
23 approve the list of research priorities that have been discussed,  
24 presented by Richard? Is there a motion on the table? Let's see if  
25 it's second. Reni, go ahead.  
26  
27 **JORGE R. GARCÍA-SAIS:** Vance, I don't see the list as one to ten.  
28 You know, I see a whole bunch of outlines here. I mean an outline  
29 with all sorts of things, you know, and I don't see a one to ten  
30 list and a one to five list. So, I don't know what to tell you,  
31 you know, I just don't see it. I see the ideas and the bullets and  
32 everything, but I don't see a one to ten list.  
33  
34 **VANCE VICENTE:** No, no, they're-- Okay. There is a topic one  
35 through eleven. And under each topic, for example, under topic  
36 one, you have one. Actually, topic one, which is fisheries landing  
37 data, there is a one, which says, improve fisheries landing data  
38 and so on. Then you go to topic two.  
39  
40 **JORGE R. GARCÍA-SAIS:** Why don't we just get rid of those topic  
41 headlines and just put one to ten, the ideas and that's it.  
42  
43 **VANCE VICENTE:** No, eventually that will come out simpler, but I,  
44 for the purpose of this discussion, I wanted to separate it by  
45 topics, which are the topics that arose from the May 1<sup>st</sup> to May 5<sup>th</sup>  
46 meeting. Okay, Reni, there's a table being prepared to summarize  
47 what we've been discussing but go ahead. Michelle?  
48

1 **MICHELLE SCHÄRER-UMPIERRE:** Yeah, I just wanted to present what  
2 you asked me to prepare. So, this table is including what Richard  
3 proposed. I spread it out by what Miguel had asked for things that  
4 are IRA and things that are FMP related. So maybe this is a way  
5 that we can rank these 10 if we need to, or add to them, or change  
6 them, or edit them in a more concise manner.

7  
8 Yeah, that sounds good. But IRA, can you explain, IRA, this is the  
9 proposal that is going to be discussed this afternoon?

10  
11 **GRACIELA GARCÍA-MOLINER:** Inflation Reduction Act.

12  
13 **VANCE VICENTE:** Si. So, what's the source of that document?

14  
15 **MIGUEL A. ROLÓN:** Vance?

16  
17 **VANCE VICENTE:** Dime.

18  
19 **MIGUEL A. ROLÓN:** Okay. Okay. IRA is the Inflation Reduction Act.  
20 The Councils are going to receive twenty million dollars for the  
21 next years. From '24 to '26, possible extension to 27. They  
22 requested from each Council to prioritize studies that can be made  
23 within those three years. All of us already have what you are  
24 looking at today, which is a priority put together by the  
25 respective SSC committees they have, and other groups and other  
26 scientists that each Council has.

27  
28 In our case, what we are looking at is exactly what Michelle and  
29 Richard are doing. Out of the list that we already have, that was  
30 presented by the SSC and the TAP before, we can select five, for  
31 example, that could be used for the IRA proposals that are going  
32 to be submitted next year. But in addition, we need to identify  
33 those long-term monitoring actions that we need to undertake all  
34 the time. And the data that we need is the biological data,  
35 economic data, and social data.

36  
37 Right now, people are asking, what information do we have on the  
38 impacts, social impacts, on the communities that depend on  
39 fisheries, the communities that are related to those communities.  
40 For example, you go to Saint Croix, the impacts directly related  
41 to the fishers, commercial, recreational that are living in Saint  
42 Croix. But then you have people on land, the consumers, that depend  
43 on that information that we get it.

44  
45 So, the information that we are going to collect in the future and  
46 the information that IRA wants are related to the socioeconomic,  
47 climate change and ongoing projects that we have to monitor the  
48 fishers. So, I believe that you're exactly in the right direction

1 with this proposed table by Michelle, where you look at the top  
2 priorities there, and then the SSC can vote on it, and they say,  
3 "Okay, those are our top priorities."  
4

5 This is not the last time, because the committee that is going to  
6 be put together, I have the Chair with us here today, will include  
7 the Chairs of that DAP Advisory Panel, SSC and TAP, plus federal  
8 government representative from the Southeast Fisheries Science  
9 Center and the Regional Office. The importance of this exercise is  
10 that you're going to tell the Council, if you are going to receive  
11 money for the next three years, four years, these are our  
12 priorities for you. In the meantime, you have to continue the  
13 priorities that we already put together in the strategic plan for  
14 the monitoring of the fishery management plans, and that includes  
15 looking at closed areas, closed seasons, looking at everything  
16 that you already have in the document.  
17

18 The priorities that you're talking about today, from what I'm  
19 hearing, everybody's saying landings data is important, commercial  
20 and recreation. Good. Looking at the effects of marine reserves.  
21 Are we closing the areas that we're supposed to or we're missing  
22 the mark? Enough said, I believe that you're in the right direction  
23 and I'd like to thank Richard and Michelle for this effort.  
24

25 That will be all. You don't have to go and give us in depth details  
26 on each one of the priorities. It's just to tell the Council, these  
27 are the priorities that you accept in your strategic plan. These  
28 are the priorities that you accept before, of the SSC, because we  
29 have strategic fatigue. We've already discussed this to death in  
30 the last three years.  
31

32 So, anyway, enough said. I believe that if you can get out of this  
33 meeting that information and then transmit that to the Council in  
34 due time, that's excellent. That's what we need. And J. Cope  
35 suggested a couple of other topics that were left out that maybe  
36 we can add here and Rich, of course. Thank you, Vance.  
37

38 **VANCE VICENTE:** Okay. Thank you, Miguel. No, the only thing I was  
39 questioning is that under column two, "IRA," that needs to be a  
40 little bit further explained. Proposed for IRA funding. Because if  
41 you read that column you say, "Well, this is what IRA is requesting  
42 from us." I mean, it's just a matter of clarification of the topic  
43 of the second column. That was my major thing.  
44

45 **MIGUEL A. ROLÓN:** Yeah, you can say, "Possible studies using IRA  
46 funds."  
47

48 **VANCE VICENTE:** Okay, thank you. Because I thought that was

1 important, to have that clarification. We have hands up. Who's  
2 next? J.J. and then Richard.  
3  
4 **JUAN J. CURZ MOTTA:** Hello, can you hear me?  
5  
6 **GRACIELA GARCÍA-MOLINER:** Yes, we can.  
7  
8 **JUAN J. CURZ MOTTA:** Thank you. Question for Rich and Michelle.  
9 Is--  
10  
11 **GRACIELA GARCÍA-MOLINER:** You're gone, J.J.  
12  
13 **VANCE VICENTE:** Can't hear you, J.J.  
14  
15 **LIAJAY RIVERA GARCÍA:** J.J., you are muted.  
16  
17 **GRACIELA GARCÍA-MOLINER:** No, we cannot hear you, J.J.  
18  
19 **LIAJAY RIVERA GARCÍA:** J.J., le quitaste el mute pero todavía no  
20 te escuchamos.  
21  
22 **VANCE VICENTE:** Richard, while J.J. fixes his mic problem, do you  
23 want to comment?  
24  
25 **RICHARD APPELDOORN:** First of all, I sent the list to Graciela and  
26 Liajay, but it's essentially the same list that you have on the  
27 screen. I was just trying to cut and paste the full sections of  
28 all those. So, I think we can just look at Michelle's list.  
29  
30 Responding to the list. I don't see the role of the different  
31 columns I know what you're trying to do in terms of do stuff that  
32 might be short-term versus stuff that's ongoing, but this is all  
33 supposed to be new stuff. If you want to have a column about long-  
34 term versus short-term, we could do that, but otherwise I don't  
35 see the what the relevance is for the column headings.  
36  
37 **VANCE VICENTE:** Yeah, I agree. I agree.  
38  
39 **RICHARD APPELDOORN:** And then I guess we're supposed to come up  
40 with a out of the top 10, the top 5, that's a lot more difficult,  
41 for me anyway.  
42  
43 **GRACIELA GARCÍA-MOLINER:** So, Richard, I sent the list to Liajay.  
44 So maybe she can put another tab and we can use your list and then  
45 include one column that says short-term and the other one-long  
46 term.  
47  
48 **RICHARD APPELDOORN:** I think we can work with the list we have on

1 the screen.

2

3 **GRACIELA GARCÍA-MOLINER:** Okay.

4

5 **RICHARD APPELDOORN:** I mean, Michelle used abbreviated wording,  
6 but it's actually easier to see that way. So, I would say, stay on  
7 that. J.J. was asking if these are ranked and in terms of one  
8 through ten. The answer is no. What we did last time is we were  
9 ranking things low, medium and high. Everything that's on this  
10 list, as far as what the SSC was doing, ranked high. So, there's  
11 no sub-ranking relative to these. These are all higher-ranking  
12 things. So, the ranking within this list of ten has not been done.

13

14 **VANCE VICENTE:** Also, to make it a proposal. This is Vance Vicente.  
15 To make the table more effective, Michelle, under topic one, let's  
16 say topic SSC one, SSC two, SSC three, SSC four, whatever, and,  
17 and so on. And then eventually, once we have the list clear we can  
18 eliminate all that. And this will be ready set like, "Hey, these  
19 are the topics. One, two, three, four, five, six, seven and eight.  
20 This is just for the sake of understanding which topic was  
21 discussed about.

22

23 And also, Michelle, under notes, you can add that all of these,  
24 SSC one, SSC two, SSC three, four, all have been ranked as high  
25 priority, as number 3 during our May 1-5<sup>th</sup> SSC and EBFM TAP meeting.

26

27 **MICHELLE SCHÄRER-UMPIERRE:** Yeah, this is Michelle. I would just  
28 say that if all of these were ranked as a number three in our  
29 previous table, we could just add that at the top.

30

31 **VANCE VICENTE:** Okay. Okay. That's fine. Thank you.

32

33 **LIAJAY RIVERA GARCÍA:** Hi, Michelle. This is Liajay for the record.  
34 Just to be clear, where do you mean to put the three or the priority  
35 at the top?

36

37 **GRACIELA GARCÍA-MOLINER:** Liajay, no te oímos nada.

38

39 **MICHELLE SCHÄRER-UMPIERRE:** I could hear her. She was asking where  
40 to put that comment in, and I would say in row one. "SSC priorities  
41 All Rank as High or Number Three," because that's where they came  
42 from, from the other document, the little numbers that were in  
43 red. All of these were number threes or high. So, it could be the  
44 title of the table. It doesn't have to go into another column.

45

46 **VANCE VICENTE:** Okay, thank you.

47

48 **GRACIELA GARCÍA-MOLINER:** Okay, Mr. Chair, Graciela here. So, I'm

1 hoping that everyone received a copy of the complete document. I  
2 think that we have most of everything that we need here. You have  
3 the rest of the complementary information in that document.  
4 Probably, one of the things that Miguel asked at the beginning was  
5 the top five. So, if you could see fit to provide us with that.

6  
7 **VANCE VICENTE:** Michelle, come in.

8  
9 **MICHELLE SCHÄRER-UMPIERRE:** Yeah, Graciela, do you mean a top five  
10 for each funding stream or a top five total, collapsing both  
11 columns? Can we have a vote and then the one with more votes wins?  
12 How do you want to do this?

13  
14 **GRACIELA GARCÍA-MOLINER:** Sí, you can do that. I mean, the top  
15 five would help in terms of providing us with the guidance for the  
16 IRA monies and that's coming up soon. So. That's where your input  
17 would be very valuable.

18  
19 **MIGUEL A. ROLÓN:** Vance? Vance?

20  
21 **VANCE VICENTE:** Go ahead, Miguel.

22  
23 **MIGUEL A. ROLÓN:** Yeah, I believe that if you look at the screen,  
24 that's what the Council needs. You don't need anything else at  
25 this time for IRA. The other things that you have done and give to  
26 the Council, the priorities for the long run, they are still there.  
27 They're in the management plan, they're in the strategic plan. So,  
28 if the SSC, as a group, if you take a vote, that those priorities  
29 that you see on the screen are the ones that you believe should be  
30 present to the Councils at the top one, so be it.

31  
32 And then remember, those are the tip of the ice. Each one of those  
33 priorities will have a lot of work to be done before it is converted  
34 into a proposal and a be a proposal document. But at least, at  
35 this time, we have the consensus of the SSC of which of the top  
36 priority you think, from the point of view of science, the SSC and  
37 the TAP, are the ones that should be presented to the Council. I'd  
38 be happy as a Council to receive this to start working on these  
39 priorities.

40  
41 And also, we can say that the other priorities that were listed in  
42 the strategic plan and the other priorities that were provided by  
43 the SSC still hold true as the priorities that the SSC would like  
44 to see the Council and the National Marine Fisheries Service  
45 pursue.

46  
47 **VANCE VICENTE:** I agree very much, Miguel. I was waiting for the  
48 table to be filled up and everybody has been able to be exposed to

1 it in order to take a vote. So, if the committee feels that they're  
2 ready to decide whether these are going to be the major priorities  
3 that we propose both as EBFM TAP as well as the SSC. I asked before  
4 for a motion to accept this list as the official list, for the  
5 time being, to be submitted to the Council for evaluation to be  
6 considered under future IRA funding. So, if somebody can make a  
7 motion and be second.

8

9 **WALTER KEITHLY:** Mr. Chairman?

10

11 **VANCE VICENTE:** Yes.

12

13 **WALTER KEITHLY:** I have a question before we vote or even make a  
14 motion. Question for Miguel, if you don't mind. That question is,  
15 has NOAA provided any guidance to the Councils regarding how this  
16 IRA money is to be spent? What we're looking at is very general  
17 measures that we're taking requesting, it could include anything.  
18 Money is fungible, and to simply say we need better data  
19 collection, some of these activities, it seems to me, should be  
20 what NMFS is doing, unless it's a specific project that would guide  
21 NMFS. So could you just let us know whether NMFS has provided any  
22 guidance on to how this money should be spent for research? Thank  
23 you.

24

25 **MIGUEL A. ROLÓN:** Okay, that's an excellent question. As we speak,  
26 they are working on it. They are supposed to send us a template on  
27 how to use this funding. Out of the 20 million, they are going to  
28 give us close to \$375,000 each to start preparing what you need  
29 for the proposal.

30

31 Let's say, for example, \$375,000 will be used for each Council to  
32 have a principal investigator or a coordinator for all the  
33 proposals. If you need somebody to work with the fiscal officers  
34 as one Council did, they are already going to hire a coordinator  
35 for all the proposal and an accounting officer that will help with  
36 the monies. Then the second part is to actually write the proposals  
37 based on this priority that you have here.

38

39 But you're right. For example, when you talk about data needs, the  
40 committee that was put together had to look at the data needs that  
41 we have. What is Puerto Rico doing collecting that data? What are  
42 the U.S. Virgin Islands doing collecting the data? And what does  
43 the Southeast Fisheries Science Center need to monitor the FMPs?  
44 And out of that, maybe we can get some money to move forward with  
45 the tools, they call it the tools for data, that we have. In the  
46 case of socioeconomic data, they are telling us we need to look at  
47 the impacts of the fishery action, management action that you have,  
48 also on the economy of the areas that you have, and for each one

1 of those proposals has to really be specific as to what is it that  
2 we need. And also, it's kind of interesting, it cannot be a  
3 proposal for long term. In other words, after '26, your proposal  
4 will die and your results will be presented to National Marine  
5 Fisheries Service and the Council, of course, but it's not  
6 guaranteed that you will have more money to follow whatever you do  
7 for the monitoring.

8  
9 Develop a species and habitat climate vulnerability indices for  
10 the U.S. Caribbean, that's a proposal that can be put together,  
11 and that's something that will continue to be used after 2024. You  
12 don't need more money for that, but at least you already have a  
13 product that you can use. A tool that you can use. That's what  
14 they are after.

15  
16 So, in summary, the \$375,000 will be to put together what you need  
17 in terms of personnel to work three years to develop the proposals.  
18 The monies that are going to be used for that proposal will be on  
19 a competitive basis. That doesn't mean that if we submit a  
20 proposal, let's say five proposals, all of them will be funded,  
21 because there will be a competition. Right now, we are going to  
22 discuss that, well, if we don't have a shutdown, we're going to  
23 discuss it at the October meeting.

24  
25 So, it's a long, long answer to work there. But in essence, the  
26 IRA money will be used for three years. They are going to allocate  
27 monies directly to the Councils. The 3 million divided in equal  
28 parts to establish what you need to work on the proposals. And  
29 then in 2024, we have until September 30 to submit all the  
30 proposals. The majority of the Council do not believe that we can  
31 submit a proposal before December 31<sup>st</sup> that would make sense.  
32 Because everything that you have discussed here, you have to really  
33 sit down and work with the SSC member, all the scientists to put  
34 together these proposals. Anyway, I hope that I answered your  
35 question somehow somewhere there is water.

36  
37 **WALTER KEITHLY:** Yes. Thank you, Miguel. You have answered it. I'm  
38 still confused, but I think you've given a little bit of clarity  
39 to where we should move. Thank you.

40  
41 **VANCE VICENTE:** Richard.

42  
43 **RICHARD APPELDOORN:** Yeah, Vance, I'm suggesting that whoever's  
44 driving, Liajay, put up the list that I had which I think will  
45 somewhat address Walter's questions as well.

46  
47 **LIAJAY RIVERA GARCÍA:** Give me a moment.

48

1 **RICHARD APPELDOORN:** Maybe a bit bigger.  
2  
3 So, when we're looking at improved fisheries landings data based  
4 on the port sampling, so I combined Puerto Rico and the Virgin  
5 Islands in here, the specific thing was to develop the statistical  
6 based methods to be able to use it. In other words, go through the  
7 data and say, "This is how we should collect the data." So that's  
8 a research topic. It's one that NMFS could do, but it's also one  
9 that somebody else could do. As long as I had the data.  
10  
11 Trying to think of what other ones might be problematic. The (h) (2)  
12 Flexibilities is specifically to test alternatives through  
13 simulation. Again, it is something NMFS could do, but it's  
14 something that someone else could do as well. Life History Data is  
15 also something that, well, it's currently being done outside of  
16 NMFS. The socioeconomic stuff, as I understood it from Tarsila,  
17 was to establish a protocol and to get it going as for collecting  
18 of desired socioeconomic information. I view that as something--  
19 that is also something that could be done outside of the Science  
20 Center.  
21  
22 I think that's kind of the way the rest of them were as well. So,  
23 I had some slightly different wording here, which I thought might  
24 be important. I took the wording for the recreational fishing as  
25 a re-initiation of MRIP, so the wordings is from the Council  
26 strategies 1.4, 1.8, 1.12. I don't think we need pilot studies on  
27 how to do things we've already been doing it. We just need the  
28 funding to go ahead and do it. And I know that, at least in Puerto  
29 Rico, Natural Resources is trying to do that. I'm not sure how  
30 well they're going.  
31  
32 Anyway, so that's cut and pasted almost exactly from the wording  
33 on the priorities, except for the one that says, "expand fisheries-  
34 independent monitoring and surveys." So, that's broader than what  
35 was listed in the recommendations, which was targeted to closed  
36 areas, which we need, but I wouldn't want to limit it to that if  
37 this is going to be our only list. Those are my comments.  
38  
39 **VANCE VICENTE:** Thank you, Richard. Graciela?  
40  
41 **GRACIELA GARCÍA-MOLINER:** Richard, I have a question for you,  
42 because in my notes, I had written topic five, which is the  
43 monitoring and surveys specifically for the closed areas. Is that  
44 your expansion of the fishery-independent monitoring and surveys?  
45  
46 **RICHARD APPELDOORN:** Yes  
47  
48 **GRACIELA GARCÍA-MOLINER:** Okay. Thanks. Yeah, we're just thinking

1 in terms of the emphasis of the closed areas, and the evaluation  
2 of those areas in regard to the request from the fishers, so this  
3 this kind of makes everything more ample and not as focused as  
4 topic five. Thanks.

5  
6 **RICHARD APPELDOORN:** All right. But topic eight is still looking  
7 at the effects of closed areas and one way to address that is by  
8 doing fishery-independent monitoring and surveys. That's just a  
9 much more directed question. We just need more fishery independent  
10 data coming in. On all things.

11  
12 **GRACIELA GARCÍA-MOLINER:** Thank you.

13  
14 **VANCE VICENTE:** Okay. One comment. The title of that list should  
15 be proposed research topics by the SSC, Scientific and Committee  
16 and the EBFM TAP establish, or propose, or prepare during the May  
17 1 to the May 5<sup>th</sup> joint meeting. And then I would say, I would start  
18 doing what Reni said. Now that we know what the topics are, we  
19 just use them as a guideline. We can eliminate all the topics and  
20 just go 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, all the way down. Eliminate  
21 the topic. Okay, and just go 1, 2, 3, 4, 5, 6, 7, 8, and 9.

22  
23 Oops. ¿Sigue por ahí para abajo? ¡Ea diablo! Okay. And now that we  
24 have them listed them we can ask for a vote to see if we, as the  
25 SSC, agree that this should be the priorities which will be  
26 submitted to the Council. Oh, okay. Richard?

27  
28 **RICHARD APPELDOORN:** Yeah, thanks, Vance. Can you go back up to  
29 the top of the list? So, these are proposed priority research  
30 topics. And since you have put it "by the SSC and EBFM TAP," but  
31 that's actually "from the SSC and EBFM TAP" from the joint meeting.  
32 This recommendation is coming from the SSC, not the EBFM TAP. We've  
33 included their recommendations with our recommendations to draw  
34 this final list. So how do you want to phrase that? I mean, that  
35 would be okay as a title.

36  
37 **VANCE VICENTE:** Yeah, that's good. Thank you. Yes, so are we ready  
38 to take a vote on it? Would you want to read them over again before  
39 we propose to take a vote to accept this as the priority research?

40  
41 **RICHARD APPELDOORN:** Vance, if I may. Since you got rid of all the  
42 topic titles, on number ten, you should get rid of the "strategy  
43 1.4, 8, 12." There you go.

44  
45 **MIGUEL A. ROLÓN:** Vance, for the record, can --

46  
47 **VANCE VICENTE:** Okay. Richard, I mean J.J.

48

1 **JUAN J. CURZ MOTTA:** Yeah, I wanted to put a motion to approve the  
2 list shown in the screen. Thank you.  
3  
4 **MIGUEL A. ROLÓN:** You need a second.  
5  
6 **VANCE VICENTE:** Okay, now I understand you. Yes, is there a second  
7 to the motion?  
8  
9 **TARSILA SEARA:** I second it. This is Tarsila.  
10  
11 **VANCE VICENTE:** Okay, any abstentions? Any discussions? Any  
12 objections? Any abstentions? If not, well, this is the list. Thank  
13 you all for all this long-term effort in developing this.  
14  
15 **RICHARD APPELDOORN:** Vance, this is Rich. Thank you for getting  
16 this through.  
17  
18 **VANCE VICENTE:** Again, thank you. A special thanks to you, Richard.  
19  
20 **GRACIELA GARCÍA-MOLINER:** So, Alison, are you online?  
21  
22 **ALISON MOULDING:** Yes, I'm here.  
23  
24 **VANCE VICENTE:** Okay, okay, we're ready for your second round. Oh,  
25 Alison, I'm sorry, I'm getting confused at this time. Okay Alison,  
26 thank you. Nice meeting you. Heard a lot about you. I read your  
27 papers.  
28  
29 **ALISON MOULDING:** Oh, thanks.  
30  
31 **VANCE VICENTE:** So welcome.  
32  
33 **ALISON MOULDING:** Thank you.  
34  
35 **VANCE VICENTE:** So, Alison Moulding will be speaking to us about  
36 the Proposed Rule to Change The ESA Status of Pillar Coral from  
37 Threatened to Endangered. Thank you.  
38

39 **Proposed Rule to Change the ESA Status of Pillar Coral from**  
40 **Threatened to Endangered - Alison Moulding**  
41

42 **ALISON MOULDING:** Yes, thank you. Thank you everyone and good  
43 afternoon. I'm Alison Moulding and I work in the Protected  
44 Resources Division of the NOAA Fisheries Southeast Regional  
45 Office. I'm the author of the proposed rule that I'm going to talk  
46 to you about today, to change the status of pillar coral from  
47 threatened to endangered under the Endangered Species Act or ESA  
48 for short.

1  
2 Next slide, please.

3  
4 I'd like to start with a brief agenda for this presentation. I  
5 will present general background information on how we list species  
6 under the ESA, including the factors that we consider, the process  
7 we follow, and the difference between a threatened and endangered  
8 species. I will give you information specific to pillar coral and  
9 why we are proposing to change its status to endangered. And then  
10 finally, I'll go over what a change in status would mean and how  
11 you can submit public comments on the proposed rule.

12  
13 Next slide, please.

14  
15 So, when making decisions about protecting species under the ESA,  
16 we use the best scientific and commercial information available.  
17 The ESA prohibits us from considering the economic impact of  
18 listing a species. There are five factors identified in the ESA  
19 that we evaluate when making a listing determination. These include  
20 present or threatened destruction, modification or curtailment of  
21 its habitat or its range, over utilization for commercial,  
22 recreational, scientific, or educational purposes, disease or  
23 predation, inadequacy of existing regulatory mechanisms, and other  
24 natural or human made factors that affects continued existence.

25  
26 Next slide, please.

27  
28 So, we also evaluate the risk of extinction to determine whether  
29 a species should be listed as threatened or endangered. An  
30 endangered species is one that is in danger of extinction.  
31 throughout all or a significant portion of its range. A threatened  
32 species is one that is likely to become an endangered species  
33 within the foreseeable future throughout all or a significant  
34 portion of its range.

35  
36 So, the distinction between threatened and endangered is the time  
37 frame for risk of extinction. Endangered species are interpreted  
38 to be currently at risk of extinction, and threatened species are  
39 interpreted to be at risk of extinction in the foreseeable future.  
40 Another difference between threatened and endangered species are  
41 the protections afforded under Section 9 of the ESA.

42  
43 Prohibitions on several types of activities are automatically  
44 applied to endangered species. These include import and export,  
45 commerce, and take. These prohibitions are not automatic for  
46 threatened species, but they can be extended through an additional  
47 regulation commonly called a 4(d) rule if we find them to be  
48 necessary and advisable for conservation. We chose not to apply

1 any of these prohibitions to pillar coral, so currently none of  
2 these ESA prohibitions are in effect.

3  
4 Next slide, please.

5  
6 So, the ESA listing history of pillar coral goes back to 2009 when  
7 NOAA Fisheries was petitioned to protect 83 species of coral under  
8 the ESA. We published a proposed rule in 2012 to list pillar coral  
9 as endangered, but then based on public comments we received, we  
10 ultimately listed pillar coral as threatened in 2014. Then in  
11 August of this year, we published a proposed rule to change the  
12 status of pillar coral from threatened to endangered. We have  
13 opened a public comment period on this proposed rule, and that  
14 runs through October 30<sup>th</sup>.

15  
16 Next slide, please.

17  
18 One of the requirements of the ESA is to review the status of  
19 listed species at least once every five years. This is to make  
20 sure that the listing classification is accurate. NOAA Fisheries  
21 announced a five-year review of the seven Caribbean corals listed  
22 under the ESA in January of 2021 and then we completed that review  
23 in August of 2022. The five-year review recommended a change in  
24 status for pillar coral based on the best scientific and commercial  
25 data available concerning threats to the species and the  
26 conservation efforts.

27  
28 Next slide, please.

29  
30 Pillar coral was first listed as threatened due to a risk of  
31 extinction related to several threats and to demographic factors  
32 that affect pillar coral's ability to recover from mortality  
33 events. The threats include ocean warming, ocean acidification,  
34 disease, nutrient enrichment, sedimentation, trophic effects of  
35 fishing, and inadequacy of regulatory mechanisms to address global  
36 threats.

37  
38 The five-year review found that these threats continue to  
39 contribute to the risk of extinction for pillar coral.  
40 Additionally, the emergence of Stony Coral Tissue Loss Disease  
41 since the time of listing has had a substantial impact on pillar  
42 coral. At the time of the original listing, NOAA Fisheries had no  
43 trend data for pillar coral. But literature published since then  
44 indicates a decline in both abundance and distribution of pillar  
45 coral, primarily due to Stony Coral Tissue Loss Disease.

46  
47 Other demographic factors that contribute to the extinction risk  
48 of pillar coral include uncommon to rare occurrence, and low sexual

1 recruitment that affect pillar coral's ability to recover from  
2 mortality events.

3  
4 Next slide, please.

5  
6 Because pillar coral is naturally rare, it often does not show up  
7 in benthic monitoring programs, and this makes it really difficult  
8 to determine trends in abundance. Since the original ESA listing,  
9 there have been two studies that have specifically targeted pillar  
10 coral and provided information on population trends. One is from  
11 Colombia, in Old Providence and Catalina Islands, which hosts more  
12 than 90% of the pillar coral colonies in that country. This study  
13 found that between 2002 and 2012, there had been a reduction in  
14 spatial extended pillar coral. Of the original monitored plots,  
15 50% of those that had contained more than four pillar coral  
16 colonies in 2002 had none 10 years later. There had also been an  
17 increase in the prevalence of partial mortality and the amount of  
18 partial mortality on individual colonies. This resulted in smaller  
19 colonies with more fragmented life tissue in 2012 compared to 2002.

20  
21 The other study that provided quantitative data on pillar coral  
22 was from Florida. This study monitored all 819 known pillar coral  
23 colonies in the state between 2013 and 2020. Declines began after  
24 the back-to-back bleaching events in 2014 and 2015 and progressed  
25 throughout the study period. By 2020, there had been a loss of 94%  
26 of live tissue, 93% of colonies, and 86% of genotypes, or  
27 genetically distinct individuals. As of the end of 2022, there  
28 were 43 surviving colonies, of which 40 had less than 5% of their  
29 original tissue remaining. And most of this mortality was a result  
30 of Stony Coral Tissue Loss Disease.

31  
32 Next slide, please.

33  
34 Pillar coral is highly susceptible to Stony Coral Tissue Loss  
35 Disease, and infection often leads to full colony mortality. In  
36 addition to Florida, there have been reports in the literature of  
37 infected pillar coral in the Bahamas, and infection and extirpation  
38 of pillar coral from individual sites in Mexico and the U.S. Virgin  
39 Islands. As you can see in this map, as indicated by the red icons,  
40 Stony Coral Tissue Loss Disease has been confirmed throughout most  
41 of the Caribbean. Because of the vulnerability of pillar coral to  
42 Stony Coral Tissue Loss Disease, and it's spread across most of  
43 the Caribbean, we assume that Pillar Coral is in decline throughout  
44 its range. Therefore, we believe pillar coral is currently at risk  
45 of extinction and warrants a change in status to endangered under  
46 the ESA.

47  
48 Next slide, please.

1  
2 We issued a proposed rule to change the status of pillar coral to  
3 Endangered on August 29th. Right now, we are in the middle of the  
4 60-day public comment period, which closes on midnight of October  
5 30th. We will consider the comments we receive and respond to them  
6 in a final determination. The result could be either a final rule  
7 to change the status of pillar coral to endangered, or a withdrawal  
8 of the proposed rule, which would keep the status of pillar coral  
9 as threatened. The statutory deadline the ESA gives us to make the  
10 final determination is within one year of the proposed rule, so we  
11 will publish a final rule or a retraction by August 29<sup>th</sup> of 2024.

12  
13 Next slide, please.

14  
15 If pillar coral is ultimately listed as endangered, the  
16 prohibitions under Section 9 of the ESA will be automatically  
17 applied. This means that for any pillar coral or pillar coral  
18 parts, the ESA would prohibit importing and exporting, delivering,  
19 receiving, carrying, transporting, or shipping in interstate or  
20 foreign commerce in the course of a commercial activity, selling  
21 or offering for sale in interstate or foreign commerce, taking in  
22 the U.S. territorial seas or high seas, possessing, selling,  
23 delivering, carrying, transporting, or shipping corals taken  
24 illegally.

25  
26 Next slide, please.

27  
28 Take has a specific meaning in the context of the Endangered  
29 Species Act. The ESA defines take as to harass, harm, pursue, hunt,  
30 shoot, wound, kill, trap, capture, or collect, or attempt to engage  
31 in any such activity. And then harm is further defined as any act  
32 which kills or injures. So, with these prohibitions automatically  
33 applied to endangered species, there will be some effects if the  
34 change of status of pillar coral becomes final.

35  
36 Next slide, please.

37  
38 So scientific research and enhancement activities involving take,  
39 import, or export of pillar coral will need an ESA Section  
40 10(a)(1)(A) permit if pillar coral are listed as endangered. Some  
41 examples of activities that would need an ESA permit include any  
42 type of collection from the wild, including colonies, fragments,  
43 gametes, or tissue samples. Restoration, including outplanting,  
44 reattachment, and stabilization. And experiments that manipulate  
45 pillar coral or their environment.

46  
47 Continued possession of pillar coral held in captivity prior to a  
48 change in status will not need an ESA permit. Furthermore, no ESA

1 permits are needed during the proposed rule stage. ESA permit  
2 requirements will go into effect if and when a final rule to change  
3 the status of pillared coral to endangered goes into effect.

4  
5 Next slide please.

6  
7 Federal agencies that authorize, fund, or carry out projects that  
8 may affect pillar coral will continue to consult with NOAA  
9 Fisheries. A change in status will not affect consultation  
10 processes or requirements. If a project is likely to result in  
11 adverse effects to pillar coral and is not likely to jeopardize  
12 its continued existence, NOAA Fisheries will issue a biological  
13 opinion with terms and conditions and an incidental take statement,  
14 as we've been doing since pillar coral was listed as threatened.

15  
16 Next slide, please.

17  
18 So, as I mentioned, we're currently in the middle of the public  
19 comment period on the proposed rule. This comment period will close  
20 at midnight on October 30<sup>th</sup>, 2023. Once the comment period closes,  
21 we will consider the public comments received and then make a final  
22 determination on whether to change the status of pillar coral to  
23 endangered or to keep it listed as threatened. This final  
24 determination will address public comments and will be made by  
25 August 29<sup>th</sup>, 2024. If a final rule is issued to change the status  
26 to endangered, it will specify when this change will go into  
27 effect, which is usually 30 days from the date of publication.

28  
29 Next slide, please.

30  
31 So, if you would like to submit comments on the proposed rule,  
32 there are two options. The first is to go to [www.regulations.gov](http://www.regulations.gov)  
33 and search for NOAA-NMFS-2023-0002. Then you need to click on the  
34 comment icon and you can enter or attach your comments.  
35 Alternatively, you may email written comments to me at  
36 [alison.moulding@noaa.gov](mailto:alison.moulding@noaa.gov). Comments sent to any other person, or  
37 using any other means, or received after the comment period closes  
38 may not be considered, and comments will be accepted through  
39 midnight of October 30<sup>th</sup>. So that's the end of my presentation, and  
40 if we have some time, I'm happy to take any questions that you  
41 might have.

42  
43 How should this work? Do you want me just to call on people, or  
44 does somebody else want to call on people who have raised hands?

45  
46 **Questions/Comments**

47  
48 **VANCE VICENTE:** Well Michelle. Please.

1  
2 **MICHELLE SCHÄRER-UMPIERRE:** Yes. Thank you. Alison, great  
3 presentation. I was wondering why one of the threatened species  
4 goes through to be proposed and the others didn't, is there  
5 something else going on that we might see more in the future?  
6

7 **ALISON MOULDING:** You know, it's always possible. It just depends  
8 on if we think they're at risk of extinction right now or if we  
9 think it's likely to be so in the future. So, pillar coral in  
10 particular, it's naturally rare and then Stony Coral Tissue Loss  
11 Disease just-- You know, on top of its rareness, it's just now  
12 more rare because of all the loss due to Stony Coral Tissue Loss  
13 Disease.  
14

15 So, we know that all the other non-acropora species that we have  
16 listed under the ESA are also susceptible to Stony Coral Tissue  
17 Loss Disease. We don't think they are in as bad a shape yet as  
18 pillar coral is. So, it is possible in the future that they could  
19 be proposed to be up listed to endangered. But right now, we think  
20 the only pillar coral is in danger of extinction currently.  
21

22 **VANCE VICENTE:** Yes, Shervette, do you have any questions,  
23 comments?  
24

25 **VIRGINIA SHERVETTE:** Yes, I just wanted to know, if we end up  
26 having a federal government closure, how that affects the comment  
27 period?  
28

29 **ALISON MOULDING:** That's a good question and I'm not sure the  
30 answer because I think the general public can still submit comments  
31 on the regulations.gov website. It's just that we won't be working  
32 to post those comments. So, you can still submit them. But  
33 generally, the way it works is people submit comments and then I  
34 go through, and I read the comments and then I post them so that  
35 you can, when you go into the regulations.gov, you can see comments  
36 that people have made previously. So obviously, if we have a  
37 government shutdown, I won't be able to post those comments.  
38

39 I don't know, you know, if there's a chance that we could extend  
40 the comment period if there were a reason to but that's a good  
41 question that I don't really have a good answer to. I think it'll  
42 depend on how long the comment period is. And if we feel like it's  
43 really impacted people's ability to make public comments.  
44

45 **VIRGINIA SHERVETTE:** I just remember last time we had a closure  
46 when you would go to a website, you would get a message that said,  
47 like, it's not working during the government shutdown. So, I wasn't  
48 sure if that would happen to the comment, to where you would end

1 up not being able to make comments.  
2  
3 **ALISON MOULDING:** Yeah, I'm not sure because I don't think that  
4 anyone has to monitor that except to post them. So, the email I  
5 got today is we don't know how it's going to affect the  
6 regulations.gov. So, I don't think-- you know, again, I don't have  
7 a good answer for you. I don't think that it should affect your  
8 ability to post, but I guess there is that potential. And then, of  
9 course, if people can't post comments, then we would extend the  
10 comment period.  
11  
12 **VIRGINIA SHERVETTE:** Thank you.  
13  
14 **VANCE VICENTE:** Yeah, thank you, Richard.  
15  
16 **RICHARD APPELDOORN:** Yeah, Alison, I was just wondering if that's  
17 a pillar coral sitting behind you.  
18  
19 **ALISON MOULDING:** It is. It's a cast made from an actual pillar  
20 coral skeleton. A few years ago, we had some money that we applied  
21 for education and outreach materials. And so, we made all these  
22 casts of some of our listed species that we can take to public  
23 outreach events. So, yeah, the one you see behind me is a pillar  
24 coral, not a real one, but just a replica made from a cast of a  
25 skeleton.  
26  
27 **RICHARD APPELDOORN:** Hey, I'm so relieved.  
28  
29 **ALISON MOULDING:** Yeah, I know they look pretty realistic. You  
30 know, it's funny because when you take them to outreach events  
31 sometimes people are like, "Oh, I didn't know they had so much  
32 color. I always thought they were white." I'm like, Oh no, that's  
33 when they're dead skeletons. They're much more beautiful in real  
34 life. That one is just painted.  
35  
36 **VANCE VICENTE:** Oh, I'm sorry. This is Vance Vicente, SSC chair.  
37 I agree very much with the upgrading of the pillar coral from  
38 threatened to endangered. I mean, I've been diving, doing  
39 scientific diving for the last, Jesus Christ, forty years, and I  
40 can tell you that it's very rare. In communicating with other  
41 scientists, and more specifically another SSC member, Reni García,  
42 I said, "Reni, do you agree with me." I mean, this coral, although  
43 it's the most obvious coral, because it's the only one that really  
44 grows columnar, and it has very specific large sized polyps, and  
45 he agreed with me that it's very rare. The colonies that I have  
46 monitored in my transects are all dead. They're either there  
47 because of a grazing by the stegastes planifrons, which is the,  
48 the--

1 **ALISON MOULDING:** Damsel fish.

2  
3 **VANCE VICENTE:** --damsel fish, a hundred percent killed by the fish,  
4 and then the others have been destroyed by hurricanes. Then, when  
5 they fall down, they get silted, and they do not always necessarily  
6 produce these perpendicular columns. So, that's my impression. And  
7 then, there's a memorandum that is in preparation, which all of  
8 the committee members have received, it's not completed yet. But  
9 essentially, it's a memorandum showing pictures of the coral, not  
10 only to be distributed among biologists, marine biologists, but  
11 also to be delivered at dive shops. I already have contacted two,  
12 no, one dive shop, there are still others that I need to pass  
13 information on.

14  
15 Essentially, I'm developing a table showing the picture of the  
16 coral and asking, have you seen this coral? commonly, often, rare,  
17 or never, and a note on the conditions of the coral, but your  
18 proposal is, I mean, from my standpoint, very assertive. Very along  
19 the right direction, very much justified. In fact, this is probably  
20 the first Scleractinia Coral ever proposed as endangered. Is that  
21 right?

22  
23 **ALISON MOULDING:** Yes. Yep. Well, in the U.S. jurisdiction, we  
24 have, I think, two that are not found within the U.S. waters that  
25 are also listed as endangered.

26  
27 **VANCE VICENTE:** Where are they? I'm sorry, I can't hear you.

28  
29 **ALISON MOULDING:** I'm not sure where they are. They're somewhere  
30 in the Indo-Pacific, but not within U.S. jurisdiction.

31  
32 **VANCE VICENTE:** No. I think that this may be, in fact, the only  
33 marine invertebrate listed as endangered, I mean, as far as I  
34 remember.

35  
36 **ALISON MOULDING:** I think there's an abalone species out off of  
37 California that's also listed as endangered. But yeah, this would  
38 be the first Scleractinia coral in U.S. jurisdiction that would be  
39 endangered.

40  
41 **VANCE VICENTE:** Yeah, you also have a Haliotis in the Pacific,  
42 which I think is listed as endangered. But anyhow, once I get this  
43 memorandum it's in about page five of the documents that Graciela  
44 sent to the SSC, you can help me fill out and what the format  
45 should look like. But at least that's my personal experience and  
46 at least I know after talking to one of the other members, which  
47 he is an SSC member, which is Reni García, I know that we have to  
48 come out, as a committee, to see if we agree with your proposal of

1 the pillar coral being upgraded from threatened to endangered under  
2 the Endangered Species Act.

3  
4 I don't know where I should go on a vote on this. I don't know how  
5 many people have been diving and monitoring reefs from the  
6 committee, or at least I know some that have. Richard has also  
7 extensive underwater experience. I would like to see what his  
8 opinion is or J.J. or any other SSC member that want to speak out,  
9 I know I'm speaking for myself and another member, Reni García.

10  
11 Is there any other SSC member that had been observing or monitoring  
12 reef habitats that agree that this coral is extremely rare and  
13 that they have been vulnerable to the Scleractinia or Stone Coral  
14 Tissue Lost Disease. So that's one question I have. And also, after  
15 monitoring the stony coral tissue loss along transects, kilometers  
16 transect on the north coast, I mean, this disease really wiped out  
17 about 60% of the diploria strigosa population and about 40% of the  
18 montastraea cavernosa and I wonder whether all the other species  
19 have suffered as much, even though are more common than the pillar  
20 coral, which you may be considering. But anyhow, those are my two  
21 points, so I would like to have any other SSC member comment on  
22 your presentation on the proposal to upgrade the pillar coral.

23  
24 Reni?

25  
26 **JORGE R. GARCÍA-SAIS:** Yeah. Hi, Alison. I'm Reni Garcia. I am a  
27 PI of the Puerto Rico Coral Reef Monitoring Program since 1999. It  
28 has rained a lot. But anyway, I just wanted to congratulate you on  
29 your talk and on your proposal or the proposal. We pretty much  
30 back it up. We've lost probably over 95%, if not everything, if  
31 not all the colonies of dendrogyra in our sampling program, which-  
32 - actually, dendrogyra was not so rare, you know, as to call it a  
33 rare. We usually had a couple, a few common colonies in almost  
34 every of the 42 reefs that we had, in many of them at least, the  
35 ones that are 10 or deeper, in terms of depth. So, you know, I was  
36 wondering, what other species have you seen with a critical  
37 condition, almost like a pillar coral? Because, for example, in  
38 our data set, we virtually lost all colonies of men of meandrina.  
39 We've lost virtually all colonies of colpophyllia. You know, and  
40 we have recorded a severe depletion of our siderastrea siderea  
41 colony, which used to be a top five in terms of species within the  
42 program. Pseudodiploria strigosa has suffered greatly in the last  
43 five years here in Puerto Rico, at least on the reefs that we carry  
44 on the monitoring program. So, not only Pilar coral, you know,  
45 there's other species that I wouldn't say they're pretty far away  
46 from what pillar coral has been experiencing in waters of Puerto  
47 Rico. Thank you

48

1 **ALISON MOULDING:** Yeah. Thanks for that comment. So, the reason we  
2 chose to up-list this pillar coral was because we did the five-  
3 year status review of all the seven species of coral that we have  
4 listed under the Endangered Species Act. So, it's the three  
5 *Orbicella* corals species, the two *Acroporas* and *Mycetophyllia*  
6 *ferox* and pillar coral *dendrogyra cylindricus*. So those are the  
7 only ones that we've monitored. I hear you that, you know, coral  
8 in general is just declining and that there are some species that  
9 are doing pretty poorly as a result of Stony Coral Tissue Loss  
10 Disease. So, you know, as an agency, we can list additional coral  
11 species if we think that that's necessary. Usually that comes about  
12 from somebody petitioning us to list additional species. Of course,  
13 we can choose to do that ourselves, but, in general, it comes from  
14 other people petitioning us to list other species.

15  
16 So, I haven't kept an eye out on the status of some of those other  
17 species that have been heavily impacted by Stony Coral Tissue Loss  
18 Disease because they're not on my radar because they're not listed.  
19 But, yeah, I know that the *colpophyllia* and *meandrina*, in  
20 particular, I think also *dichocoenia*. So, some of those other  
21 species are, you know, in pretty bad shape too, but they're  
22 currently not listed. So, if anyone from the public feels that it  
23 would be important to list those species under the ESA, that's  
24 always an option that you could petition us to list additional  
25 species.

26  
27 **VANCE VICENTE:** Okay, Alison. Thanks.

28  
29 **ALISON MOULDING:** Mm hmm.

30  
31 **VANCE VICENTE:** Yep. Thank you very much. If there are any other  
32 questions, I would-- yes. I'd like to see if the committee can  
33 take a vote on weather, based on their experience and their  
34 comments and other people comments and based on her presentation,  
35 do they believe that we support, as a committee, the proposed rule  
36 of upgrading the pillar coral, the *dendrogyra cylindricus* from a  
37 threatened to endangered. I would like to hear a motion to say  
38 that we support a NMFS office of protective resources proposition  
39 to conduct this upgrade and then see if it's second. So, I propose  
40 that any member makes this proposition.

41  
42 **VANCE VICENTE:** Okay. Reni, Richard, and then Miguel Rolón.

43  
44 **JORGE R. GARCÍA-SAIS:** Sorry, I just forgot to lower my hand.

45  
46 **VANCE VICENTE:** Richard.

47  
48 **RICHARD APPELDOORN:** Yeah, Vance. I don't think I'm in agreement

1 with the SSC taking a position one way or the other of this. We  
2 didn't do that with conch, a petition for being listed as  
3 threatened. We had a presentation, we encouraged everybody to  
4 submit comments individually, so a lot of fishermen did. I did.  
5 some other NGOs did. The Council did. But I'm not in agreement  
6 with the SSC doing that. And if it is, the SSC would have to write  
7 out a statement that they're going to submit that we've all agreed  
8 to the wording of. [crosstalk] we have 10 minutes to do that.

9  
10 **VANCE VICENTE:** Yeah, I agree, Richard. At least we were able to  
11 comment on the proposal, but I agree that taking a vote as a  
12 committee, to accept it or not-- I can talk about my individual  
13 opinion, and Reni too but I think it would be maybe pushing the  
14 goals of the SSC members beyond their duties. I don't know. Miguel  
15 Rolón?

16  
17 **MIGUEL A. ROLÓN:** I was going to say exactly the same thing. The  
18 SSC cannot, by itself, submit anything to the ESA people. What you  
19 need to do is tell the Council, "We agreed to do that." But each  
20 one of the members can submit the comments directly to the  
21 authorities in this case. That's what we have done before, not as  
22 a committee, as an SSC as such. And I believe that goes along with  
23 what Richard just mentioned. Thank you.

24  
25 **VANCE VICENTE:** Thank you, Miguel. Are there any other comments?  
26 Alison, again, thanks a lot for your presentation. It's been very  
27 instructive, very good, very well oriented, very focused. And it's  
28 a very rightful proposal on my part. So, if there are no other  
29 questions, we want to thank you again for your time. And remember  
30 all the SSC members that there's a time limit for electronic  
31 submission for this proposal. The public meeting was yesterday. I  
32 was not able to attend. I planned to attend, but I was doing other  
33 things in preparation for this SSC meeting, but thanks again. And  
34 if not we are going to be ready for Adyan Ríos. Maybe we can take  
35 a 10-minute break?

36  
37 Yeah, let's take a 10-minute break, and then we come back with  
38 Adyan. Okay?

39  
40 **GRACIELA GARCÍA-MOLINER:** Thank you, Mr. Chair.

41  
42 **VANCE VICENTE:** We resume about 4 o'clock, okay? Okay. At 4  
43 o'clock. Thank you.

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

46  
47 **VANCE VICENTE:** Well, good afternoon again. We're ready for the  
48 last session of this afternoon's SSC meeting of September 27, 2023.

1 So, we have back Adyan Ríos and Kyle Shertzer to complete the  
2 information that we asked them to supply to us before we can make  
3 any, before "we," SSC can make any recommendations to the Council  
4 regarding the SEDAR 80 U.S.V.I. Queen Triggerfish for Saint Thomas  
5 and Saint John. So, Adyan, if you're ready? Hi Sennai, see your  
6 picture on the screen.

7

8 **SENNAI HABTES:** Hey Vance, how are you?

9

10 **VANCE VICENTE:** I'm doing better than the May 1 to May 5 meeting.  
11 That's an auto evaluation, God knows what everybody else thinks.

12

13 **SENNAI HABTES:** You're doing great. You're doing great. The key is  
14 just keep the train moving forward.

15

16 **VANCE VICENTE:** Thank you.

17

18 **GRACIELA GARCÍA-MOLINER:** Kyle, will you be presenting or will  
19 Adyan be presenting? Kyle, can you hear us?

20

21 **KYLE SHERTZER:** I can hear you.

22

23 **GRACIELA GARCÍA-MOLINER:** So, will Adyan be presenting, or-

24

25 **KYLE SHERTZER:** Yeah, she should be here any moment.

26

27 **GRACIELA GARCÍA-MOLINER:** Okay, gracias. Kevin, Adyan, should we  
28 just transfer to you?

29

30 **ADYAN RÍOS:** We just got audio, um.

31

32 **GRACIELA GARCÍA-MOLINER:** Okay.

33

34 **Cont. SEDAR 80 USVI Queen Triggerfish**

35

36 **ADYAN RÍOS:** I guess we will pick up. So, that's fine. Let me see  
37 here. Let's share my screen.

38

39 Okay. So, what we'll be talking about is some of the original model  
40 profile we did. We have R0 and we have the initial equilibrium  
41 catch profiles. Those will be in Excel.

42

43 Here we have, just to orient us, we have a lot of runs with  
44 different metric tons as the initial equilibrium catch, which then  
45 informs the initial F. And so, what we're going to look, we have  
46 all this output, we're going to look at the initial F and the  
47 likelihood, as well as the R0 that come out of this.

48

1 And so, we'll start with our likelihood. And also, we'll show some  
2 sensitivity and the selectivity. So, on our x-axis, for most of  
3 these plots, where the line is solid like this, we'll have our  
4 initial catch equilibrium. So, that's what we profiled over. And  
5 in the kind of original base model which just uses an initial catch  
6 equilibrium, which is the average of the first three years, it's  
7 at like 36 is where--

8  
9 **KYLE SHERTZER:** Adyan, the Google slides are showing right now.

10  
11 **ADYAN RÍOS:** Oh, I'm sorry. I needed to be showing this screen  
12 this whole time. So, I was orienting to some of the plots that  
13 we'll be seeing. There's a few we can look at, but there's a few  
14 key ones. And just also orienting that we've got our different  
15 runs and we've got other variables here as well. But we'll be  
16 focusing on things like, since this is a profile over the initial  
17 equilibrium catch, we'll look at that versus the likelihood. And  
18 we can also look at, these are sorted from smallest to largest,  
19 but you see we have some bouncing around of the  $R_0$  and we do so  
20 for the selectivity as well, and the likelihood. So, we'll see  
21 some of that model instability at this stage shine through.

22  
23 So, here's one of the first plots to show you. We have the initial  
24 equilibrium catch in metric tons. The original model included  
25 around this 37 because that was the mean of the first three years  
26 of the time series. So, our likelihood bounces around. We do see  
27 a little bit of curvature here, but we're seeing, you know, pretty  
28 different alternate states that the model finds. The likelihoods  
29 are different but there's some wiggle in the parameters that we're  
30 working with.

31  
32 And so, the next one up here is the SSB, that's the scaling that  
33 we see. Continuing with a few more kind of, of these ensemble runs.  
34 We have our initial catch equilibrium in metric tons. As well as  
35 what the initial  $F$  is. And so, we see it, you know, generally  
36 increasing as we tell the model that there's a higher equilibrium  
37 initial catch. It's a higher initial  $F$ , but we're still seeing  
38 kind of some runs that really are focused on a much higher initial  
39  $F$ . And so, this model starts in the year 2000, profiling over  
40 initial catch equilibrium.

41  
42 So, we do see movement in our selectivity. And so, this parameter  
43 is where the selectivity increase starts. Not a lot of movement,  
44 but some wiggle there between 32.5 centimeters and 33.5  
45 centimeters. And then, similarly for the RVC where it starts, we  
46 see it range from 34.5 or 35 to be wiggling in this space to 37.  
47 So, there's something that's not pinned down. And then, that's  
48 true too for whether the RVC goes to full selectivity or not, which

1 in this case, it's sticking around, not going-- in the majority of  
2 these models it's doming. And so normally, in a lot of the runs,  
3 we only cycle to full selectivity when the F was much higher. So,  
4 I'm certain that this run is an odd run associated with the high  
5 F.

6  
7 The next information we'll look at is a profile over R0. But this  
8 again shows some of that instability of, you know, we only have  
9 about 10 parameters in this model and here we have the initial F  
10 informed by the initial catch equilibrium that's being fed in. But  
11 again, we see these different kind of spaces that the model is  
12 finding. With one that does have kind of a lowest likelihood but  
13 also, still, like, I don't know. Another thing could be to just  
14 kind of maybe isolate to these models and look at what some of the  
15 other plots look like when we're just looking at these and not  
16 these, but the point, I think, of this exercise is to just really  
17 highlight that at this stage-

18  
19 **VANCE VICENTE:** Excuse me, Adyan. Jason Cope.

20  
21 **ADYAN RÍOS:** Okay, go ahead, Jason. Thank you.

22  
23 **JASON COPE:** Hi. Yeah. Yeah. Thanks for all of this work here. I  
24 think you're right, looking at these types of profiles and for  
25 those folks who do profiles, we know that rarely do they all work  
26 in one take, right? You usually have to redo runs because they  
27 don't converge. My guess is a lot of these spikes you're seeing  
28 are just, they're just models that didn't converge. They didn't  
29 get to the right solution, so they have a local minima, because  
30 what we should see is a line that, for the total likelihood, should  
31 not be spiking like that. So, as you're alluding to, there's noise  
32 in these spikes, and there's an underlying curve there that's  
33 probably, what's really going on. So that's what I'm trying to  
34 train my eye to and interpret things.

35  
36 So, maybe just for everyone else looking at this, I would ignore  
37 the spikes. This should look like a parabola or a line or flat  
38 line, not spiky. That's just the nature of doing these things  
39 rapidly. Sometimes they all work, most of the time they don't, and  
40 it'll give you spikes because they don't converge. But there's  
41 plenty here for us to talk through, just, let's not get stuck on  
42 the spikes. Thanks.

43  
44 **ADYAN RÍOS:** Rich?

45  
46 **RICHARD APPELDOORN:** Yeah, just following up on Jason's comment.  
47 Does it make a difference what percentage of this stuff is spiking  
48 versus not spiking?

1  
2 **JASON COPE:** No, I would almost guarantee if the time was allowed  
3 for them to have a proper sort of look at this, if they reran any  
4 of those spiked models, if they reran it with a different starting  
5 value or something, I'm almost positive it's going to get to a  
6 lower likelihood that's more in line with this continuous line  
7 that we kind of see at the bottom and you would get rid of that  
8 spike.

9  
10 We see this all the time. This is super, super common. You'll get  
11 these spiky things, you rerun that model in isolation, and it fixes  
12 itself and it gives you a better answer. So, these are almost  
13 assuredly not converged.

14  
15 **RICHARD APPELDOORN:** Okay, thanks.

16  
17 **GRACIELA GARCÍA-MOLINER:** Adyan, you're muted.

18  
19 **ADYAN RÍOS:** Thank you. Next, we can look at the R0 run and we do  
20 have some spikes there, but it's also very flat. And so, we've got  
21 the total likelihood across the R0s profiled and then we do also  
22 have movement in the selectivity parameters. Here's our initial F  
23 across these R0s. And so, F is declining as we increase our R0.  
24 And we do see a very drastic change in our selectivity. This is  
25 the peak of the RVC selectivity. I think some of these runs didn't,  
26 especially in the beginning, I think these maxed out. So, we can  
27 ignore the first number of them.

28  
29 But like, for example, if I were to take this and put it here and  
30 drag it over to our peak selectivity for RVC here. Um, yeah, so,  
31 and also for where the selectivity ends, we see a lot of  
32 differences in whether it flattops or not, or in this case-- which  
33 one is this? Yeah.

34  
35 So just coming back to the complexity here with where the model's  
36 at, when we're having the list of parameters that we have currently  
37 and the start year of 2000, which is summarized here. These are  
38 the parameters that we're trying to estimate in this model that  
39 starts in in 2000.

40  
41 Are there any other combinations to dive into? I mean, these were--  
42 - we can talk a little bit about where we would also like to run  
43 these profiles, because we could consider taking information from  
44 other types of runs to inform the earlier years. So, we do start  
45 in 2000.

46  
47 **VANCE VICENTE:** Jason?  
48

1 **JASON COPE:** Yeah, so looking at this I think the most interesting  
2 one-- So, the log R0 has a presumption about the equilibrium catch  
3 or some catch history that goes before 2000, is that correct?  
4  
5 **ADYAN RÍOS:** These models use the initial equilibrium catch of the  
6 average of the first three years.  
7  
8 **JASON COPE:** Like 37 or whatever it was.  
9  
10 **ADYAN RÍOS:** Yeah.  
11  
12 **JASON COPE:** Yeah. Yeah, great. Okay, so I think maybe the initial  
13 one that you showed, I know it's a lot noisier because it has so  
14 many spikes, but the profile across the initial equilibrium catch,  
15 and therefore the F, I think that might be the most useful for us.  
16 I'm curious. So, you go from a hundred out to ten. And I think the  
17 ten looks like it's on the line. It's not like a spiky thing. And  
18 the hundred also looks like a reliable one. And so, the question  
19 is, what's the total likelihood difference there? The statistical  
20 framework behind these likelihood profiles is, generally, if you  
21 see a value more than 1.9 to-- I'm assuming this is negative log  
22 likelihood units here.  
23  
24 **ADYAN RÍOS:** Yes.  
25  
26 **JASON COPE:** Yeah, so right. If we see something above two, just  
27 to round it, then we're seeing significantly different or  
28 significantly less data supported models. I'm curious. So, it looks  
29 like it's saying that it wants a higher equilibrium catch, I'm  
30 curious if for the 37 run, how many negative log likelihood units  
31 is that away from [inaudible] you can look at your table.  
32  
33 **ADYAN RÍOS:** I don't know if it's exactly 37 that did that, so  
34 let's just hide a few.  
35  
36 **JASON COPE:** Something near that. Yeah, just kind of that initial-  
37 - Yeah, anything that's near your initial sort of guess of what  
38 that estimate.  
39  
40 **ADYAN RÍOS:** Okay, so then our likelihood-- Let's close this. It  
41 should-- it doesn't show up, so let's just--  
42  
43 **JASON COPE:** So, maybe it's 30. Is it 38? I don't know.  
44  
45 **ADYAN RÍOS:** I had a few more. So, here's our likelihood, so a 15.  
46 Let me hide it, I can revisit that. It's easier to see here. So,  
47 let's unhide.  
48

1 **JASON COPE:** So, it's about five. Right? We're seeing about a five-  
2 unit difference there, 515 to 510ish. Yeah, that's good right  
3 there.  
4

5 **ADYAN RÍOS:** Got an eleven here.  
6

7 **JASON COPE:** Oh, is that the, I'm sorry. I was looking at column  
8 AE that's-- is AJ the--  
9

10 **ADYAN RÍOS:** Sorry. No, you're right. It's AE.  
11

12 **JASON COPE:** AE? Yeah. Okay. So, I think it was like around 516  
13 versus almost 511. So, it's like a five-unit difference. So, if we  
14 were to just take this profile as it is, you've provided plenty of  
15 information for us to see that this model, in order to fit the  
16 data, it wants the data to-- well, the data are supporting a higher  
17 average equilibrium catch.  
18

19 So, then the question would be, okay, if that's the case, what are  
20 the other differences between this model? Is R0 different? Is the  
21 stock status at the end of the time series very different? Are the  
22 selectivities super different, right? I'm presuming the  
23 selectivities are changing because the data are being fit  
24 differently. So, something's changing. But those could be a couple  
25 of things that we look at. Just to understand, again, what we're  
26 saying is that this is a model that we're going to allow, for at  
27 least a moment, we're going to say we believe that it can fit the  
28 data. How does it want to reconcile this equilibrium catch value  
29 in order to fit the data the best?  
30

31 And the way that it can fit the data the best is it can only change  
32 what you're estimating, which I believe is R0 and the selectivity  
33 parameters. So, those are the only things that can change.  
34

35 **ADYAN RÍOS:** Mm-hm  
36

37 **JASON COPE:** Yeah, so we kind of just want to see, okay, what is  
38 it assuming under those two-- we'll just take those two hypotheses.  
39 What is it assuming? And how different are those results? And if  
40 they are showing us some pretty different things, and we're like,  
41 "okay, this really, really matters. There's a fundamentally  
42 different explanation about how selectivity is operating and  
43 there's a fundamentally different idea of what the stock status  
44 is." So maybe we can stop there. Is that easy to do with what you  
45 have here?  
46

47 **ADYAN RÍOS:** Yeah, like we can run the r4ss plus on these two, on  
48 the 37 and on the 100.

1  
2 **JASON COPE:** Yeah, yeah, you can do that or if you just even have  
3 this spreadsheet. So, you have the initial-- Okay, so we can  
4 already see initial SSB. There's quite a difference, 480 versus  
5 320. Okay, not a surprise.  
6  
7 **ADYAN RÍOS:** Oh, let me unhide the other variables that are here.  
8 Okay, so, shoot, let's go back to here. Okay, so, we were just  
9 looking at SSB.  
10  
11 **JASON COPE:** Huh. Yeah. Yeah. So yeah, all that stuff's different.  
12 So, definitely a different scale to start with. Do you have stock  
13 status in the most current year or the stock spawning biomass in  
14 the most current year?  
15  
16 **ADYAN RÍOS:** I have, let's see, SSB virgin, SSB initial,  
17 recruitment virgin, recruitment initial, chain catch, SSB virgin.  
18  
19 **JASON COPE:** That's all, yeah, all initial.  
20  
21 **ADYAN RÍOS:** Yeah.  
22  
23 **JASON COPE:** Okay. Yeah, that's something. And like you said, if  
24 you wanted to run the r4ss plots, that would pull out everything.  
25 And if that's handy to do, I don't want to hijack this precious  
26 time that we have with everyone, right? This isn't just me noodling  
27 around on assessment outputs. I want to make this useful. And I  
28 want to make sure that what we're providing by the end of today is  
29 exactly what you need. I feel like we look at this, we're going to  
30 get an idea of what this model is saying differently and the  
31 implications on selectivity, and maybe fixing selectivities or  
32 certain values and how differently does selectivity get  
33 translated, I think those plots, we will visually see how different  
34 the selectivities are, which can be very helpful.  
35  
36 So maybe I'll stop and we can check in with the rest of the SSC if  
37 continuing on this exploration of these two models and seeing,  
38 visually seeing the outputs, I feel would be very useful in  
39 diagnosing what's going on, but I don't want to be the only person  
40 saying so.  
41  
42 Are there any objections to having Adyan run the r4ss code, which  
43 would probably take a minute or two of producing plots for these  
44 two. Is that fair, Adyan, to say?  
45  
46 **ADYAN RÍOS:** It's run.  
47  
48 **JASON COPE:** Oh, you got it. Great.

1  
2 **ADYAN RÍOS:** So, let's bring this one up. So, we'll have model 37  
3 on the left and model 100 on the right.  
4  
5 **JASON COPE:** Awesome. Let's take a look at-- Maybe let's look at  
6 the length comps. Let's just see if these things are fitting the  
7 data. Okay.  
8  
9 **ADYAN RÍOS:** Let me make this a little bit smaller on each.  
10  
11 **JASON COPE:** You can even, if you had-- yeah, yeah, yeah, that's  
12 fine. I was going to say, you can click on that aggregate one and  
13 it might just pull it up. Oh, that's great. Yeah.  
14  
15 Yeah, I mean, to my eye, that looks pretty darn similar. So, okay,  
16 so it's fitting the data. That's my take here. It's fitting the  
17 data. Let's take a look at the selectivities.  
18  
19 **ADYAN RÍOS:** Okay.  
20  
21 **JASON COPE:** Oh yeah, yeah, there's an index in there, we should  
22 probably look at the indices too. Sorry, the data fit there. Okay.  
23  
24 **ADYAN RÍOS:** Similar.  
25  
26 **JASON COPE:** Okay. Yep. They're not doing anything drastically  
27 different and there's enough flexibility in this model for it to  
28 do different things. So, it's coming in the selectivity, probably.  
29 So yeah, let's take a look at this. Okay.  
30  
31 **ADYAN RÍOS:** They are the same. Let me double check something real  
32 quick.  
33  
34 **JASON COPE:** I was going to say, "Let's make sure you got different  
35 models there." [Laughter]  
36  
37 **ADYAN RÍOS:** 37  
38  
39 **JASON COPE:** That's 37. Yeah.  
40  
41 **ADYAN RÍOS:** 100. Okay.  
42  
43 **JASON COPE:** All right. Well, okay. Well, I mean, this is saying  
44 that the selectivity is really not driving a big difference there,  
45 right? What this is going to show you is that you are just literally  
46 starting at different places, and then it's going to take you  
47 somewhere different. So, both of these models-- and I don't recall  
48 the original model, where it took you, but this is like saying

1 you're at or above unfished.  
2  
3 **ADYAN RÍOS:** Yes.  
4  
5 **JASON COPE:** Is that, was that also coming from the last, every  
6 model that we've seen thus far?  
7  
8 **ADYAN RÍOS:** So, no. But that's also when we used a much more  
9 informative F, it goes a lot higher.  
10  
11 **JASON COPE:** So, it ends higher? Like, are you saying it ends at  
12 even a higher biomass?  
13  
14 **ADYAN RÍOS:** No. So, the scale goes to just being a lot more so  
15 around the management target versus above biomass.  
16  
17 **JASON COPE:** Yeah.  
18  
19 **ADYAN RÍOS:** And so those runs are associated with-- that was kind  
20 of where we got to with fixing the initial F from the historical  
21 analysis, which we want to try and kind of understand the space of  
22 where the model is trying to fit, but that that was kind of a hard  
23 pin down, a hard assumption on initial F that does put it in that  
24 in that space. And those initial Fs are on the scale of 1.8 versus  
25 0.00--  
26  
27 **JASON COPE:** That these are coming out of. Yeah. I mean, maybe  
28 just for the benefit of everyone else here, like there's nothing  
29 magical going on. What's happening is, basically, this model is  
30 starting in 2000 with information. And the question is, where is  
31 it starting from? Basically, what's the relative stock status in  
32 the year 2000? Because that's going to tell you, if you got there  
33 under a certain fishing level, right? What it's able to do, how  
34 it's able to move forward, given that catches that you've presented  
35 to the model and you're fixing all of the life history. Right? So,  
36 we don't have any uncertainty in the life history, so far. And we  
37 have a generous production model, right? Cause steepness equals  
38 one. So that's about as high as it can get.  
39  
40 And so, all of this is coming down to, that little blue dot. If  
41 people can see that blue dot on here, where do you start that?  
42 Right now, it's starting at really high because, Adyan, as you had  
43 just said, all of the searching that you've done from 37 to 100  
44 turn out to be very low rates of exploitation. And you're saying  
45 that that initial model that you did was something like, instead  
46 of-- I don't know. Did you say it was like an order of magnitude  
47 higher or twice as high?  
48

1 **ADYAN RÍOS:** Yeah.  
2  
3 **JASON COPE:** Yeah, right. So, if it was an order of magnitude  
4 higher, we're talking a thousand metric tons as the initial  
5 equilibrium, not a hundred. And that would get you back to that  
6 model, that F, roughly, that you've been looking at in other  
7 models.  
8  
9 And so, just to really kind of scrunch this down for everyone,  
10 that little dot is really what we're trying to get at, right? This  
11 is like, when the data start to show up, where are we entering in  
12 our understanding of the stock? And you can get there assuming all  
13 sorts of different equilibrium catches or fixing the F or telling  
14 the R0. They're all doing the same thing. They're all telling you  
15 how to get that entry point.  
16  
17 I think what we're learning here is that-- well, I'm wondering,  
18 the profile that you showed up to a hundred metric tons does not  
19 include the hypothesis that you looked at, at some other time,  
20 where the F is really, really high. Yeah, all of these Fs are  
21 really, really, really low. You could extend this profile out to  
22 basically include much higher equilibrium catches, though, I don't  
23 know, do you expect the equilibrium catches to be in the hundreds  
24 of metrics tons? I don't know.  
25  
26 If you can click on the catch tab, just to remind, at least me,  
27 what the metric tons are here. Okay, so you have mostly,  
28 [inaudible] and if I've heard that right. That initial F that got  
29 you really low had to have been in the hundreds and hundreds of  
30 metric tons on an equilibrium basis to get you down there. Is that  
31 correct to say?  
32  
33 **ADYAN RÍOS:** Well, no, because we did it differently, right, to  
34 get there. So, the initial F would come from this whole time  
35 series, this longer time series and so the scale of F in the longer  
36 time series is in the twos and threes versus the 0.0s. And so,  
37 this is an order of magnitude different on fishing mortality. But  
38 I'm still confused as to how the initial equilibrium plays into  
39 how this approach that we tried.  
40  
41 **JASON COPE:** Yeah, so go ahead and click on the selectivity for  
42 that one that you're on right now. This sort of ramped up one. Ah,  
43 see, I think these are very different. Like, click on the  
44 selectivity for this one over here.  
45  
46 Yeah, so this one you have, and then you have a dome-shaped one  
47 with that one, right? So, when interpreting the Fs you're going to  
48 have, if you push the selectivity over to where it's only getting

1 the biggest ones, your Fs would presumably be higher on the  
2 population for which it is selecting for. And so, I think that  
3 might be a little bit of the confusion in interpreting. Because if  
4 you go back to the time series for each of these, let's take a  
5 look at the time series for each. All right. This one's bringing  
6 you in around 2000.

7  
8 Scroll down to the relative stock size just for a second. Okay, so  
9 this one is saying you're roughly around 40% on this one and this  
10 one you're below. Yeah, you're right. You're about half below.  
11 And, again, this is just saying your equilibrium catch in the  
12 presumptive sloped model is just higher than this one. And so,  
13 it's bringing you in at a different starting point and then it's  
14 moving you forward with the same scale of catches, right? So, if  
15 you've already been reduced a lot and you're starting, I believe,  
16 that this other one, because of that, has a much lower relative  
17 stock status. You're just playing with the with the scale, what  
18 the scale of the catches means.

19  
20 And this is getting back to basically what Erik was saying earlier  
21 is, what is that exploitation rate being interpreted as? If you  
22 have a lower stock scale, the interpretation of the Fs is just  
23 going to be much higher and I think that's what you're seeing on  
24 this ramped up one. And it's not easy or always easy to understand  
25 what a ramped over a long period of time, because that ramping up  
26 is not the same as saying you're catching something, basically,  
27 forever at this value of 37 or 100.

28  
29 You could say, what's the midpoint between the two ramped values.  
30 I don't know what that is. If you go to your catches again for the  
31 right sided model, there. I mean, shoot, that's not even that much.  
32 That's going from 1960 to-- well, that, yeah, that's interesting.

33  
34 So that's really, really low. So, it's somehow getting a signal in  
35 your population. Your lengths started in year 2000?

36  
37 **ADYAN RÍOS:** Yes.

38  
39 **JASON COPE:** Yeah. Interesting. Yeah, you might-- Look, this is  
40 kind of going into a primetime stock assessment talk, which I don't  
41 think the SSC wants to go too deep in. There are a couple of other  
42 interesting things going on here. I think one is, what does the  
43 length composition inform you as to that entry point for your stock  
44 status? So, that's another interesting thing.

45  
46 Yeah, it's kind of weird that a ramp up to something of a low  
47 metric tonnage is dropping your scale so much. Very, very  
48 interesting, but fitting the data pretty much the same, right? If

1 you go to the link comps. They look pretty much the same.  
2  
3 **ADYAN RÍOS:** [crosstalk]  
4  
5 **JASON COPE:** I think most of this happens. Let me just say this,  
6 your selectivities are different in the two models, and that is  
7 what's driving that difference, massively. Because it's  
8 interpreting how you're removing things from the population in  
9 that ramp totally different than if you would have had the same  
10 selectivity in your left sided model.  
11  
12 So, for me, a lot of this is coming back down to the model is  
13 willing to do a lot of different selectivity configurations to get  
14 the exact same data fit. So, you almost have to tell it what  
15 selectivity reasonably is through expert opinion [inaudible] in  
16 order to be able to interpret the scale without knowing the  
17 selectivity. And I think maybe Erik had said this earlier too. You  
18 have too many unknowns for when the data starts to interpret that  
19 scale well, or that F.  
20  
21 So, I think what we're looking at here, between these two models,  
22 is definitely selectivity differences and I think we need to figure  
23 out how can we provide some guidance on figuring what reasonable  
24 selectivities are before you can even investigate reasonable  
25 scales, initial scales, for this population. All right.  
26  
27 **VANCE VICENTE:** Okay. Jason.  
28  
29 **JASON COPE:** Yeah, I'll be done. Thanks. Sorry.  
30  
31 **VANCE VICENTE:** Kyle needs to make an intervention.  
32  
33 **KYLE SHERTZER:** Oh, well, actually, Jason just said exactly what  
34 I was-- Where I was headed is that we would love to have some  
35 guidance on hitting down the selectivities, and I think that will  
36 lead to some more stable estimates if we do so, and then we'll  
37 build that into the uncertainty analysis. And one of the pieces of  
38 information that we looked at during the break was what Adyan is  
39 showing right now, which might help us with the amount of doming  
40 in the RVC, which if you remember in the last set of plots, there  
41 was really severe doming, what I would characterize as severe  
42 doming in the left hand plot, but it was flat-topped in the right  
43 hand plot. We suspect that there's some doming given that they're  
44 seeing larger fish in deeper water that are unavailable to the  
45 survey, for most of the survey. But that's what's shown in this  
46 plot.  
47  
48 And I think, I'll let Adyan walk you through this, but I think the

1 conclusion we can draw from this is that there is some doming in  
2 the RVC, but it's not a lot of doming. So, that might help us pin  
3 down what that selectivity could look like in the model. But Adyan,  
4 well, Erik has his hand raised.

5

6 **VANCE VICENTE:** Yeah, Erik Williams.

7

8 **ERIK H. WILLIAMS:** Yeah, thank you, Vance. Erik Williams. That was  
9 really fun listening to Jason go into lead assessment mode there.  
10 That was great. I didn't want to interrupt because he was basically  
11 saying a lot of what I would have been saying, so I agree with,  
12 ultimately, how he wound down to probably the same conclusion I  
13 would have come to and exactly what Kyle just said.

14

15 So, I'm really just repeating everything that was just said, which  
16 is fix selectivities and then redo these profiles with a broader  
17 range and I think you'll see model stability. You'll start to see  
18 some curvature in those profiles, and then it will come down to  
19 how good are our assumptions about selectivity. You might need to  
20 do some sensitivity around that, but I think that's pretty much  
21 what everybody just said. So, thanks. Thanks for that, Jason. That  
22 was entertaining.

23

24 **ADYAN RÍOS:** So, we have, in this plot, the different size bins in  
25 centimeters, five-centimeter size bins. In the lower plot, we've  
26 got the RVC survey. So, the National Coral Reef Monitoring Program  
27 also goes by RVC. Then we have the Deep Coral Reef Monitoring  
28 Program. And just to orient you to the colors, 2017 is in the N  
29 CRMP, but not the DCRMP, and 2022 is in the deep water, but not  
30 the, the shallow water.

31

32 But what we see in a skew, in particular I think, the 15 to 20 and  
33 the 35 to 40 really shows this, as well as the 30 to 35. So, in  
34 the NCRMP, we have a higher frequency, this is the proportional  
35 frequency, in the 15 to 20, than we do in the deep water. And in  
36 the deep water, we have a higher frequency of these larger fish in  
37 the deep water compared to the shallow water.

38

39 So, the overall size that they're seeing, they're seeing similar  
40 sizes in both regions, but with different frequency, so we do see  
41 a slight skew towards larger individuals in the deeper water. You  
42 don't see the smallest individuals and you still see some of the  
43 largest individuals, but not with as much frequency. So, that's  
44 how we can interpret this.

45

46 And just following Kyle's comment earlier over about the level of  
47 domeness that this can inform. It does seem that it would be subtle  
48 because you are seeing the same sizes, but there does appear to be

1 a difference in the habitat that is surveyed by the RVC versus  
2 not. And so, the selectivities would be different in these two  
3 regions because of where the fish are.

4  
5 How to translate that in the model is still challenging. So, it's  
6 almost, like, do we keep with the logistic, which is very different  
7 from what the model is trying to estimate. When it's estimating  
8 all of the parameters it goes very dome, but when we attempted  
9 those higher Fs, it went to logistic.

10  
11 These I think I saw a comment in the chat about the difference in  
12 the maximum size. It looks like these are very few individuals and  
13 it's difficult to say what year. So, like, yes, there is a  
14 difference in the maximum size, but we also don't have the sample  
15 size of how many fish that was. If that was, like, one fish.

16  
17 **ADYAN RÍOS:** Okay, Shervette, and then Jason Cope.

18  
19 **VIRGINIA SHERVETTE:** Adyan basically just tried to address my  
20 comment, which was, previously, what we were sort of interpreting,  
21 everybody's anecdotal points, was that you see larger fish deeper,  
22 but from this size frequency comparison, you actually are seeing  
23 RVC fish in those larger size classes, but you're not seeing them  
24 at the deeper sites in the DCRMP data. And, Adyan, I think you can  
25 actually tell by the position of where the little lines are for  
26 those largest ones that they documented them in all three years.  
27 And I'm guessing that it is one individual.

28  
29 I had this data through 2019 and there was maybe one or two of the  
30 larger fish from the NCRMP stuff. But yeah, my understanding from  
31 just seeing past data for this is that those little lines represent  
32 essentially one fish.

33  
34 **VANCE VICENTE:** Okay. Thank you, Virginia. Jason.

35  
36 **JASON COPE:** I'm curious if there is one selectivity over the other  
37 that you feel like you would be more comfortable fixing and then  
38 allowing the model to estimate the other. Because I think one  
39 behavioral thing I'd like to see out of these models is, whether  
40 you choose an equilibrium catch or you ramp the catch up within  
41 the ballpark of that equilibrium catch. Maybe that equilibrium  
42 catch is like the midpoint of the ramp. Those should give you very,  
43 very similar model results, and specifically they should not be  
44 giving you completely different selectivities.

45  
46 I can't tell if this model is just super sensitive, and it might  
47 need some jittering, which means just starting the model at  
48 different values and seeing if it converges at a better value to

1 get away from that sort of the hijinks that's going on with the  
2 selectivity. But I'm just curious if you feel like you could  
3 estimate one and fix the other, and if so, which one do you think  
4 you would fix? It seems like the data really wants the fishery  
5 data to go dome-shaped. And is it the RVC stuff that keeps, it's  
6 either popping low for dome-shaped or staying high, is that the  
7 one that shows more of a flip flop? And if so, if the RVC is, if  
8 you can fix that one, you might be able to get more stable behavior  
9 going on.

10  
11 **ADYAN RÍOS:** Yeah, just pursuing that as well because you can fix  
12 one and explore the other and then fix the other and flip flop  
13 there.

14  
15 **JASON COPE:** Absolutely, yeah. That's good thought.

16  
17 **ADYAN RÍOS:** So, that's good advice to explore moving forward.

18  
19 **VANCE VICENTE:** Okay, Richard.

20  
21 **RICHARD APPELDOORN:** Yeah, I was just wondering how rapid the  
22 growth is. Just because I'm seeing a similar pattern for the RVC  
23 data between-- and I can't read the colors here, but there's three  
24 bars that show an extended linear increase in one year, and then  
25 two years later-- I think it's two years later. I'm wondering  
26 whether that's just a shift over, in which case the missing or the  
27 lower amount of fish in the 35 to 40 size is, or in that grouping  
28 there, somewhere is-- I guess this 40 to 45 is because this larger  
29 year class hasn't gotten that large yet. But it seems to be like  
30 five centimeters in, you know, a year is a lot. So, it probably  
31 isn't due to growth, but I was just wondering if that might be a  
32 possibility.

33  
34 **ADYAN RÍOS:** So, in the bottom plot, we've got 2017 in the darkest  
35 color on the left, 2019 and 2020. And then the only year that is  
36 in both of these plots is 2020, which is, I think-- No, hold on.  
37 2017, 2019, 2020, and then we have 2020, 2021, and 2022.

38  
39 So, the end of the top plot coincides-- Sorry, the beginning of  
40 the top plot, the first bar coincides with the end of the bottom  
41 plot. It could be good to see this with years separated into  
42 different panels. Or just completely aggregated, but, um.

43  
44 It's difficult to interpret which gray this is because our eyes  
45 kind of-- It's an optical illusion whether is this gray, this  
46 gray, or is it this gray?

47  
48 **KEVIN MCCARTHY:** They're picking this because this is for a

1 publication.  
2  
3 **ADYAN RÍOS:** Yes. Yeah, it's in black and white for the  
4 publication. It's almost like this gray is this gray.  
5  
6 **RICHARD APPELDOORN:** I think you need to change the colors for the  
7 publication. They have to put some bars or stippling or something.  
8  
9 **ADYAN RÍOS:** I believe it's in review. So, they'll probably get  
10 that feedback.  
11  
12 **KEVIN MCCARTHY:** Right? Yeah. It's not our public, but that's good  
13 counsel.  
14  
15 **RICHARD APPELDOORN:** All right.  
16  
17 **ERIK H. WILLIAMS:** I think all of you are reading too much into  
18 this. I think the big message from this is that whatever, if there  
19 is doming, it's very slight and that's about the most you can say  
20 with this data and I would just stick with that basic principle.  
21  
22 **VANCE VICENTE:** Right now, we're approaching five o'clock in the  
23 afternoon, and we have to make a list of recommendations, but then-  
24 - Kyle?  
25  
26 **KYLE SHERTZER:** I'm going to make a recommendation for the  
27 selectivity and see if anybody agrees or disagrees. I'm going to  
28 suggest that we allow some doming and have it come down to a value  
29 of 0.9 in a base level configuration, and then explore that range,  
30 maybe open it up to 0.8 to 1 in a range of sensitivity or ensemble  
31 analyses, but allowing it to have some dome shapeness, but it's  
32 subtle as Erik suggested, so if we bring it down to 0.9.  
33  
34 **VANCE VICENTE:** Okay. Did you write down the, this recommendation?  
35 This will be recommendation number one by Kyle.  
36  
37 **LIAJAY RIVERA GARCÍA:** Sorry, Vance, did you talk to me? This is  
38 Liajay for the record.  
39  
40 **VANCE VICENTE:** Yes, Liajay. I was asking you to write down Kyle's  
41 recommendations so that we can have it on the record and on the  
42 board.  
43  
44 **LIAJAY RIVERA GARCÍA:** Okay. I did try to get it all on time, but  
45 can Kyle please repeat the recommendation?  
46  
47 **VANCE VICENTE:** Jason, do you agree with the recommendation?  
48

1 **JASON COPE:** Yeah, no, I think that recommendation is fine. I think  
2 I was just going to make it explicit that by doing that you're  
3 going to be fixing that selectivity estimating the other. And then  
4 my recommendation is to run an equilibrium catch model and a sloped  
5 catch model where they go from zero up to a value and you can pick  
6 a year and see if those are getting, at least ballpark, similar  
7 values that would at least confirm that the model is behaving as  
8 you would expect and not doing some strange stuff. And it really  
9 should, if you're fixing one of the selectivities, the other one  
10 I think should be better defined and you will probably get-- and  
11 then you can move on to the profiling, which you will, as Erik  
12 said, probably get much better performing profiles that were  
13 probably flipping between different selectivity parameterizations,  
14 not parameterizations, but specifications this last time. So,  
15 those are my recommendations for folks to consider.

16  
17 **VANCE VICENTE:** Okay, we need to have that on record, Jason, so if  
18 you can please summarize it and write it up, please.

19  
20 **JASON COPE:** Yeah, is there a document that we're sharing that I  
21 can do that with, or do you want me to do it in an email?

22  
23 **VANCE VICENTE:** You can do it and contact Liajay, which is taking  
24 notes.

25  
26 **JASON COPE:** Okay.

27  
28 **LIAJAY RIVERA GARCÍA:** Thank you.

29  
30 **VANCE VICENTE:** Yes, Erik. Okay. So, we agree with Jason's  
31 recommendation.

32  
33 **RICHARD APPELDOORN:** Vance, you got hands up.

34  
35 **VANCE VICENTE:** Yes. Adyan and then Jason.

36  
37 **ADYAN RÍOS:** I would also like to just also have officially on the  
38 record, the confirmation of the steps that we took following, cause  
39 all of these decisions on the screen now we're not implemented  
40 when we last met, but they are now implemented based on the  
41 conversations from last time. And so, with the exception of initial  
42 F which we have explicit guidance from the example that we've  
43 talked about, now with Jason's recommendation about using a ramp  
44 versus the initial equilibrium catch runs just to compare those.  
45 So, but apart from that, on steepness and pulling the length comps  
46 just the "okay" with that based on the justifications we talked  
47 about at the start of the presentation.

48

1 **VANCE VICENTE:** Okay. Thank you. Jason.  
2  
3 **JASON COPE:** Yeah. Sorry. I had left my hand up. I put it down.  
4 But just to say, I agree with Adyan, what she just said about all  
5 of those other things being assimilated into the new version of  
6 the model. And also, Liajay, I sent you a little bulleted list of  
7 the recommendations that I--  
8  
9 **LIAJAY RIVERA GARCÍA:** Yes, I just received it and I already have  
10 it on a word document. Do you want me to share it now?  
11  
12 **JASON COPE:** Awesome. Thank you. Great. Thank you.  
13  
14 **VANCE VICENTE:** Liajay, if we can have it on the screen so we can  
15 look at it once more. Thank you. Kyle?  
16  
17 **KYLE SHERTZER:** Related to bullet point two. If we try this and it  
18 still seems like the fishery selectivity is not stable, not well  
19 estimated, is that something that you would suggest that we try to  
20 pin down as well?  
21  
22 **JASON COPE:** Yeah, you could do what Adyan had recommended. You  
23 could flip it and try to estimate the RVC selectivity and fix the  
24 fishery selectivity. I mean, who can predict what these assessments  
25 are going to do, but I'm kind of hopeful, seeing how that fishery  
26 selectivity has behaved across the very limited models that I've  
27 seen, but it's a good question.  
28  
29 The other question that pops up here is, say you do this, now what?  
30 Right? You do these things, say they work, the model is behaving  
31 well, you get a decent profile. Is that sufficient direction from  
32 the SSC? Do you want more from that point to suggest how to choose  
33 where to go from there or is that a fine place to land?  
34  
35 **VANCE VICENTE:** Yeah, for the time being, I think that, that is  
36 our recommendation and let me read it. Fix the RVC selectivity.  
37 Estimated fishery selectivity. Run models with equilibrium catch  
38 (chosen by assessors) and sloped catch (chosen by assessors) to  
39 confirm model behavior is similar. Repeat the profile over  
40 equilibrium catch.  
41  
42 We don't have time today to run those models, but if you can  
43 implement these recommendations and then send the results to the  
44 SSC committee and Graciela, we'll look at it afterwards.  
45  
46 **JASON COPE:** Maybe to complete what Kyle asked. Yeah, if the  
47 selectivities are just both misbehaving, regardless of which one  
48 you fix, I kind of feel like you're at the point of having to fix

1 them, in order to sort out the scale, and then explore uncertainty  
2 in the fixing of those parameters through sensitivities and  
3 ensembles and in other ways. But yeah, if they're misbehaving  
4 through estimation, I think you're forced to fix them. I would  
5 love to get other opinions if folks don't agree, but that's what  
6 I would do.

7

8 **VANCE VICENTE:** Okay. Any comments? Richard or Erik?

9

10 **KYLE SHERTZER:** I'd like to see written what Kyle suggested. So,  
11 when we approve this there's no question about what's going on  
12 there.

13

14 **VANCE VICENTE:** Okay. Thank you, Richard. Erik.

15

16 **ERIK H. WILLIAMS:** I was just going to agree with Jason. I think  
17 he's spot on with exactly as he just described. You may end up  
18 having to fix both sets of selectivity. And then, yeah, figure out  
19 how to how to cast the uncertainty in that into some other process,  
20 an MCB type process or sensitivity process, whatever that might  
21 be. But yeah, I just wanted to-- Yeah, I agree with everything  
22 Jason's been saying. So, he's been saying it for me. So, I  
23 appreciate it.

24

25 **VANCE VICENTE:** Okay. Yeah. Thank you, Erik. Next up, Kevin  
26 McCarthy.

27

28 **KEVIN MCCARTHY:** So just to give the next steps. Am I hearing that  
29 we're going to flesh out these bullet points before we break and  
30 we're going to give the assessment leads a little bit of  
31 flexibility to move forward, depending upon how these various  
32 points of guidance play out. Is that what I'm hearing? Because  
33 right now, you know, we want to end SEDAR 80 sometime. So, I'm  
34 looking for a way forward to get us to a final result. So, is the  
35 SSC okay with that level of guidance and letting the assessment  
36 biologist take it from here, maybe with some consultations within  
37 the science center, of course, as we always work that way. Or does  
38 the SSC need an intermediate step before we're ready for a final  
39 presentation.

40

41 In other words, do we need to have another meeting in six weeks?  
42 I'm asking both the SSC and the and the assessment leads. Or are  
43 we okay with this level of guidance, some independence to move  
44 forward on the part of the assessment biologists and then meet at  
45 probably the end of November, I guess, is when the next SSC meeting  
46 would be scheduled to look at some final results. Just trying to  
47 look for the finish line here.

48

1 **VANCE VICENTE:** What I think and what I propose is that you run  
2 the models based on what we have just discussed and then keep the  
3 Science the Statistical Committee members in contact with it and  
4 that we receive that information, the results of the modeling  
5 before the next SSC meeting. Let's not wait for the next SSC  
6 meeting. We would like to have that information beforehand so we  
7 can evaluate it and have time to a good judgment about them.  
8

9 **KEVIN MCCARTHY:** So, is that in the form of another virtual meeting  
10 like this, Vance? Between now and the end of November, or how do  
11 you see that happening? That's—  
12

13 **VANCE VICENTE:** No, before any meeting either virtual or real we  
14 should get that information as soon as it's available before  
15 calling it for another meeting on this. It may be necessary, it  
16 may not be, depending on what the results of the modeling tell us  
17 about what should make a decision on ACLs, ABCs, and whatnot.  
18

19 **KEVIN MCCARTHY:** Right. So, I guess the thing-- my concern here  
20 is, putting together a presentation like Adyan and Kyle did for  
21 today and talking through everything is easier for them than to  
22 put together a document that the SSC can digest and come to some  
23 conclusions.  
24

25 So, I'm trying to make this the easiest process for everybody,  
26 given how long SEDAR 80 has been stumbling along until recently.  
27 So, I would prefer, if the SSC needs to see it again prior to a  
28 final review, that we have another one of these virtual meetings  
29 rather than putting together a report for distribution. Because  
30 that will take a lot of time relative to just having another one  
31 of these working meetings.  
32

33 **VANCE VICENTE:** Well, I would like to see some progress first  
34 before holding another virtual meeting, see what, you know, with  
35 the time and resources that you have, how much can you respond to  
36 these new methods of estimating the fishery selectivity, run the  
37 model, equilibrium catch and repeat the profile of equilibrium  
38 catch. If you can provide the SSC beforehand before calling in for  
39 another virtual meeting, we'll appreciate that and then we can  
40 decide from there.  
41

42 **KEVIN MCCARTHY:** Okay. Well, I'll get together with the with Adyan  
43 and Kyle and we'll put together a plan. Now, the other thing  
44 looming, of course, is the government shutdown and when that  
45 happens, all bets are off. Because we can't work. We can't even  
46 use our emails. So, fingers crossed on Congress getting something  
47 together on the budget side of the house, quite literally, between  
48 now and Monday. But we'll chat, the leads and me, and we'll come

1 up with a plan and put together a proposal for a way forward and  
2 send it out to the SSC. And I appreciate what you're asking for,  
3 Vance. I'm just trying to come up with the least burdensome way of  
4 getting through the rest of SEDAR 80.

5  
6 **VANCE VICENTE:** Okay, thank you. Let's hear from Richard, Jason,  
7 and then Reni before we close this meeting.

8  
9 **RICHARD APPELDOORN:** Yeah, I was in agreement with the initial  
10 comments that Kevin made and I think Jason also had a comment that  
11 agreed with that.

12  
13 I don't think we need to have another meeting. I don't think we  
14 can have a meeting without having an official meeting. So, having  
15 something sent to us that we would discuss amongst ourselves is,  
16 I don't think, in our charter. We either have a meeting or we  
17 don't.

18  
19 What I would like to see is that, assuming we are going to have a  
20 more typical November/December meeting before the Council meets in  
21 December, that we have the results presented to us at that meeting,  
22 but it would be nice to have something, the PowerPoint or  
23 something, given to the committee in preparation for that meeting.  
24 You know, so it's one of the documents that the committee gets  
25 that should be reviewed before the meeting, so we're a little bit  
26 more versed on it. So, when we have the meeting, it can be a quick,  
27 you know, "Here's what we found. It either works or it doesn't."  
28 So, I sure don't want to see another meeting between now and then.

29  
30 **VANCE VICENTE:** Yeah, I agree. Jason.

31  
32 **JASON COPE:** Yeah, I think you maybe saw my chat. As long as the  
33 assessors feel like this is good usable guidance, it's clear for  
34 them, I trust that they can go forward and do what they need to  
35 with this and I don't feel the need of another meeting, another  
36 special meeting. Thanks.

37  
38 **VANCE VICENTE:** I agree. Reni, your comments.

39  
40 **JORGE R. GARCÍA-SAIS:** Yes. Well, my comment is, essentially, a  
41 very basic elemental question. I mean, we've seen all these  
42 selectivities and doming and shapings, what does the model tell us  
43 about stock status of queen triggerfish in Saint Tomas? What's the  
44 bottom line? what is it telling you?

45  
46 **VANCE VICENTE:** Yeah, I agree, Reni, and that's why we would like  
47 to have, as quickly as possible, as much information from this  
48 modeling and then find out what does it tell us about what your

1 ABC levels should be, ACLs, and the whatnots. Yeah, because right  
2 now we're talking about the very intrinsic, microscopic components  
3 of what we're expecting. But we need to see what this model tell  
4 us about recommendations regarding annual catch, the risk factors,  
5 etcetera.

6  
7 **JORGE R. GARCÍA-SAIS:** Well, you know, after these few hours, all  
8 I know is that we are uncertain. Again, the uncertainty thing keeps  
9 coming up.

10  
11 But aside from that, you know, I am very concerned and worried  
12 that I'm going to call this committee to be aware. DNER just passed  
13 'una ordenanza' a new ordinance 2023-7, which closes the deep  
14 snapper fisheries for another three months. And that's closing the  
15 deep snapper fishery for six months, in effect.

16  
17 So, expect all kinds of things going on with the statistics  
18 regarding those species. I don't know how this comes out of the  
19 blue, without any comments from us or whatever. We're just not in  
20 the picture anymore. I am very concerned because the fishermen are  
21 pissed about this and they're going to keep on fishing and the  
22 statistics are going to go to hell. So be aware. It's going on.  
23 It's official. And it's from June to August. So, it's six months  
24 of closing of the fisheries without any real good data to back  
25 this up, you know? So that's the way we work here. Sorry, to end  
26 it up like this, but that's the way it is.

27  
28 **VANCE VICENTE:** I think that is the recommendations to run this  
29 model using these new parameters and have the Center Adyan and and  
30 Kyle tell us, "Hey, this is what it implies regarding, what's the  
31 fishery status and what should be the levels that we should be  
32 setting for ABCs, ACLs and so on. I think that that's where we  
33 stand right now.

34  
35 So, I think that it is 5:16, I propose to adjourn. Oh, wait,  
36 there's some more stuff coming in. Let's see what Jason says and  
37 then Richard.

38  
39 **RICHARD APPELDOORN:** Well, while you're waiting I was just going  
40 to point out. For people who want more information. Reni gave a  
41 more detailed description, in the chat, when he first joined the  
42 meeting. If you go back to that, it'll have everything he just  
43 said plus some more things about getting rid of the limited entry  
44 for that fishery as well. So, you don't need to ask him anymore.  
45 He actually wrote it all down in detail in the chat.

46  
47 **JORGE R. GARCÍA-SAIS:** Thanks, Rich.

48

1 **VIRGINIA SHERVETTE:** We can't view the chat if we logged out at  
2 any point. Any comments that he made prior to, the last time we  
3 logged in. So, I just missed whatever Reni wrote out because I had  
4 to log off for lunch or whenever.

5

6 **VANCE VICENTE:** Jason, then Richard.

7

8 **JASON COPE:** Yeah, sorry. When you've originally called my name  
9 about that chat that I dropped, I didn't know if you wanted me to  
10 speak to it. So, while I have this on, I'll just say about the  
11 idea. Yeah, we do keep bringing up uncertainty and there's a lot  
12 of it. I think we've learned; I feel like we've learned a lot about  
13 where that uncertainty is coming from, and I'm hoping that these  
14 additional model runs are useful to the point where you were really  
15 able to hone in on a useful model that the assessors can then start  
16 to build all of that uncertainty around. And so, I feel like  
17 there's been some really good progress made here, some big  
18 decisions, some things to still look at, but I think it's all to  
19 the point of getting very close to a model that's going to help  
20 guide the decision making that needs to happen. Thanks.

21

22 **VANCE VICENTE:** Yeah, thank you, Jason. Any other final comments?  
23 Graciela?

24

25 **GRACIELA GARCÍA-MOLINER:** So, a question regarding the when and  
26 where we're going to have a meeting, etcetera. So, Kevin, would it  
27 be possible for us, if there is no shutdown, to talk about it and  
28 see if we need a morning virtual meeting or if we don't. Because  
29 remember, we have to plan it at least 30 days in advance.

30

31 **RICHARD APPELDOORN:** Vance, this is Rich. I was going to copy  
32 Reni's initial chat and repost it so we could see it, but I cannot  
33 find it now, and I did not log out, so I'm not sure what happened.

34

35 **VIRGINIA SHERVETTE:** No, I just reposted it.

36

37 **JORGE R. GARCÍA-SAIS:** It's there. Somebody copied it again in its  
38 entirety; it is in two sections now.

39

40 **RICHARD APPELDOORN:** Okay.

41

42 **JORGE R. GARCÍA-SAIS:** I'm very concerned because I've been going  
43 out with the fishermen quite frequently lately, several of them,  
44 and they are all really, really upset about this. Very upset about  
45 this. They were telling me, the statistics were already in error,  
46 because of that permit, most of the fishermen that are fishing for  
47 queen and cardinal snappers do not have the DNER permit. So,  
48 instead of them reporting it as a queen snapper, they're reporting

1 everything as silk snapper and the statistics are all, you know,  
2 you know what, you know. So, now they are saying, "Okay, well, now  
3 you're opening up the fishery to all the fishermen that want to  
4 have the permit, but then you're closing me down three more months,  
5 which does not coincide with the silk snapper closure." So, in  
6 effect, they're closing the fishery for six months. So, who can  
7 live off of that fishery with only six months of fishing. It's  
8 completely absurd. Some people will go back to the reef and keep  
9 fishing and putting more pressure on the shallow reefs and the  
10 others will just fish catch the fish and will not report it. That  
11 fishery will go unreported, essentially. So that is the status.  
12 So, I don't know who recommended this. It just came out of the  
13 blue. So, it was like, "Okay, you want the license? Oh okay, I'll  
14 give you a license, but I'll close you for half a year." So that's  
15 the attitude. I really cannot, I cannot relate to this, you know,  
16 in any way.

17  
18 I have not heard any discussion of this, within the SSC whatsoever,  
19 so obviously we're not even consulted. I don't know what we want  
20 to do about it. But the implications are the things that we have  
21 to deal with and that's why our statistics are so down on the  
22 floor. You know, there's so much uncertainty in our statistics  
23 because of all these ridiculous regulations that are not founded  
24 on anything.

25  
26 **VANCE VICENTE:** Yeah. Thank you, Reni. Adyan?

27  
28 **KEVIN MCCARTHY:** So, my computer died, so I'm going to speak as  
29 Adyan. Well, not really, but in her place. So, I can't speak to  
30 any of the regulations that have been put in place by the DRNA but  
31 I want to go back to Graciela's earlier question about meeting and  
32 arranging for another meeting. What I'm hearing from the SSC, and  
33 correct me if I'm wrong, is that given the guidance that's been  
34 provided, we're going to go ahead and implement that guidance and  
35 continue forward, as Jason mentioned, here within the Science  
36 Center. I don't think that we need another interim meeting. I don't  
37 think we need another meeting until the next regularly scheduled  
38 meeting. That's November, December timeframe. End of November,  
39 early December, whenever it's scheduled. But I'm hearing we don't  
40 need another interim meeting.

41  
42 **VANCE VICENTE:** Okay. Thank you, Kevin.

43  
44 **KEVIN MCCARTHY:** Thanks, everybody, for helping out today. It's  
45 been very, very helpful.

46  
47 **ADYAN RÍOS:** Yes.

48

1 **VANCE VICENTE:** Are there any final comments. Richard?  
2  
3 **RICHARD APPELDOORN:** Yeah. Motion to adjourn.  
4  
5 **JORGE R. GARCÍA-SAIS:** Second.  
6  
7 **JASON COPE:** Third.  
8  
9 **VANCE VICENTE:** Okay. Thanks. Thanks very much, everybody,  
10 particularly to the speakers of today. They were very productive.  
11 And Kevin, thanks for your time and effort on this and everybody  
12 else. So, we'll be in contact through email regarding what progress  
13 we do on the modeling. Well, thank you very much.  
14  
15 **KEVIN MCCARTHY:** Thanks, everybody.  
16  
17 **ADYAN RÍOS:** Thank you.