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2 **CARIBBEAN FISHERY MANAGEMENT COUNCIL**  
3 **SCIENTIFIC AND STATISTICAL COMMITTEE MEETING**  
4 **Embassy Suites Hotel**  
5 **San Juan, Puerto Rico**

6  
7 **NOVEMBER 15-16, 2011**  
8

9 The Scientific and Statistical Committee of the Caribbean  
10 Fishery Management Council convened at the Embassy Suites Hotel,  
11 San Juan, Puerto Rico, Tuesday morning, November 15, 2011, and  
12 was called to order at 9:20 o'clock a.m. by Chairman Barbara  
13 Kojis.

14  
15 **BARBARA KOJIS:** Good morning. This is the Caribbean Fisheries  
16 Management Council SSC meeting on November 14 and we're starting  
17 about 9:20 a.m. I would just like to welcome everybody to the  
18 meeting and I would just like to go around the table and have  
19 everybody state their name for the record and we'll start with  
20 Vance.

21  
22 **VANCE VICENTE:** Vance VICENTE.

23  
24 **TODD GEDAMKE:** Todd Gedamke, Southeast Fisheries Science Center.

25  
26 **MIKE SISSEWINE:** Mike Sissenwine.

27  
28 **GRACIELA GARCIA-MOLINER:** Graciela Garcia-Moliner, council  
29 staff.

30  
31 **BILL ARNOLD:** Bill Arnold, Southeast Regional Office.

32  
33 **JORGE GARCIA:** Reni Garcia, UPR Mayaguez.

34  
35 **IRIS OLIVERAS:** Iris Oliveras, council staff.

36  
37 **BARBARA KOJIS:** I'm Barbara Kojis, chair of the SSC. I would  
38 also like to just welcome Miguel del Pozo. He is a new SSC  
39 member and an anthropologist from the University of Manchester  
40 and where is that located?

41  
42 **MIGUEL DEL POZO:** I'm teaching at the university, but I just  
43 graduated from the University of Manchester in the U.K.

44  
45 **BARBARA KOJIS:** Everybody else, could you make sure that your  
46 cell phones are off or on vibrate.

47  
48 **GRACIELA GARCIA-MOLINER:** You have Mara and we'll go through the

1 roll call and then you also have Maria Lopez from SERO, the  
2 Regional Office, on the Go To Meeting.

3  
4 **BARBARA KOJIS:** Mara, could you, or anybody else who is on  
5 speakerphone, just make sure that you're still here?

6  
7 **MARA LEVY:** This is Mara Levy from Office of General Counsel.

8  
9 **BARBARA KOJIS:** Welcome, everybody. The first topic we would  
10 like to discuss is the legal responsibility of the -- First of  
11 all, let's just go through the agenda. We've got the agenda and  
12 we first of all need to approve the agenda. Does anybody have  
13 any other business or anything like that that they want to add  
14 or do you want to make a motion to approve the agenda?

15  
16 **MIKE SISSENWINE:** Can we formally change the dates of the  
17 meeting to November 15 and 16?

18  
19 **BARBARA KOJIS:** We certainly can. Today is November 15 and  
20 sorry about that.

21  
22 **MIKE SISSENWINE:** Move to approve the agenda as amended.

23  
24 **BARBARA KOJIS:** The other thing is make sure you state your name  
25 when you speak, so that when the recorders try to transcribe the  
26 minutes that they know who is speaking. They oftentimes cannot  
27 tell just from your voice and since I'm the only woman here that  
28 doesn't have a Hispanic accent, I'm going to make the assumption  
29 that they can figure out that it's me speaking.

30  
31 The first item on the agenda is to discuss the legal  
32 responsibility of the SSC for providing OFL and ABC  
33 recommendations to the CFMC for species not undergoing  
34 overfishing or which are not overfished.

35  
36 Does anybody, first of all, have any questions regarding this at  
37 this stage that either I can answer or the attorney can answer,  
38 just about why we're doing this or what have you or why we're  
39 even considering this?

40  
41 Mara, could you speak to the feasibility of eliminating OFL from  
42 our recommendations and if it is feasible to do so? I  
43 understand that the South Atlantic Council has done this and it  
44 is feasible to do so and how we would go about this, if we  
45 decide to do it?

46  
47 **DISCUSS THE LEGAL RESPONSIBILITY OF THE SSC FOR PROVIDING OFL**  
48 **AND ABC RECOMMENDATIONS TO THE CFMC**

1 **MARA LEVY:** The guidelines are pretty clear that the SSC is  
2 still to recommend an ABC. In developing the ABC, you kind of  
3 have to come down from what you determine the overfishing limit  
4 is. Whether or not you can make that determination exactly,  
5 like an exact number, is a science question.

6  
7 I guess I'm a little bit concerned because you have already  
8 recommended an OFL and so in that way, it's a little bit  
9 different than the South Atlantic and that's not to say you  
10 can't go back and say you want to now retract the OFL  
11 recommendation, but I think you would need to explain why what  
12 you recommended before is something that you now feel is not  
13 appropriate and then what you would be recommending.

14  
15 It's all going to depend on your judgment and your discussion.  
16 If you have decided that you can't precisely define an OFL, but  
17 you can define an ABC that somehow is reduced from some  
18 theoretical OFL below a certain amount, so that it's below the  
19 overfishing limit, then that might be something, but really it's  
20 going to depend on your discussions and what you determine and I  
21 can't really be any more precise than that regarding that. Does  
22 that make sense?

23  
24 **BARBARA KOJIS:** Just for explanation for the people that are  
25 here, why would we want -- What's the purpose of eliminating the  
26 OFL? What would that mean in terms of if we just had an ABC,  
27 what does that mean in terms of management and so on of the ABC  
28 and ACL?

29  
30 **MARA LEVY:** I'll answer that question, but I just want to  
31 preface it with the fact that I'm not really -- It doesn't  
32 create a very strong record for the SSC if you start becoming  
33 concerned with the management consequences of your scientific  
34 advice.

35  
36 The SSC is supposed to be a science-based recommendation and  
37 whether or not you think, based on science, you can recommend an  
38 OFL versus an ABC, et cetera, et cetera, is one thing. What the  
39 consequences of that are in terms of management decisions really  
40 shouldn't affect or change your science recommendations and so  
41 that's just a caveat.

42  
43 I think if you all start getting into that discussion, you end  
44 up weakening your record as to your science decision. That  
45 being said, the SSC is supposed to make recommendations.

46  
47 If you all feel you can't make a recommendation for something  
48 like an OFL, the Act still requires and the guidelines still

1 require that the FMP have some sort of overfishing status  
2 determination criteria, whether that be an OFL or the MFMT.

3  
4 The FMP has to have that and so the council is going to have to  
5 specify something. Now, I believe there's something on the  
6 books regarding overfishing already from the SFA Amendment,  
7 which was the MFMT.

8  
9 What the council decides to do if you don't give them an OFL  
10 versus an ABC is really going to be a management decision and  
11 something they're going to need to discuss. That being said,  
12 the Act requires the council to develop ACLs and they may not  
13 exceed the fishing level recommendations of the SSC and what the  
14 guidelines envision is the SSC recommending an ABC and the ACL  
15 may not exceed the ABC.

16  
17 What the council decides to do if you just recommend an ABC and  
18 how they decide to set the ACL is a management decision. I  
19 believe in the South Atlantic they didn't get an OFL from their  
20 SSC and they had some sort of overfishing determination  
21 criteria, probably the MFMT from a prior amendment, and made the  
22 determination that it was somewhere higher than the ABC.

23  
24 I don't know whether there was a specified amount in terms of  
25 what the difference was. I don't think there was a number and  
26 so the council decided, in some of those cases, to make the ACL  
27 equal to ABC. Does that answer your question?

28  
29 **BARBARA KOJIS:** To some extent. The reason I brought it up was  
30 because at the CFMC meeting, this was brought up by Dr. Crabtree  
31 and he was wondering why the SSC did not consider not providing  
32 an OFL.

33  
34 I understood that part of his concern was that the ramifications  
35 of exceeding the OFL would be causing, potentially causing,  
36 difficulty when we have, in essence, come up with an ABC that is  
37 just average catch and it's not based on things like fishing  
38 mortality, et cetera, that we don't have stock assessments for  
39 these species and so because they're data-poor, we've had to  
40 just use average catch or median catch or some median of central  
41 tendency. That was why I was bringing this up and it was  
42 obviously a concern of the CFMC and Dr. Crabtree, in particular.

43  
44 **MARA LEVY:** Right and I remember that and the implication of  
45 that is if you have an OFL and the OFL is exceeded, if the  
46 fishery is undergoing overfishing, which you have to end  
47 immediately, the practical consequence, from the last council  
48 meeting, was that they reduced the -- They made a reduction from

1 the OFL so that the ACL would not be set at the OFL.  
2  
3 If you set them equal, then you're basically going to be  
4 presumed to not prevent overfishing, unless you have a really  
5 good reason for saying that you'll never exceed that ACL or you  
6 will not exceed it in most cases and I don't know that they  
7 could make a good case for that and so they did the reduction.  
8  
9 I guess that's the council's concern, but I would just advise  
10 the SSC to sort of -- You can be aware of that, but I would not  
11 advise you to base your decisions, your scientific decisions, on  
12 what you think the management decisions will be and whether you  
13 believe that there's something I guess incorrect or wrong or  
14 that scientifically you don't like now about the OFL  
15 recommendations that you made, that would be one thing.  
16  
17 Like I said, I think, because you've already given the OFL  
18 recommendations, that you need to have some sort of higher  
19 justification for saying now that wasn't correct and it was sort  
20 of like an oops, we made a mistake type of thing. I would like  
21 to see more on the record about why you would change that and it  
22 not be we're changing it because the council doesn't like the  
23 management implications of it.  
24  
25 **MIKE SISSENWINE:** If there is no recommendation of an OFL from  
26 the SSC, as you've indicated, the council will still be required  
27 and NMFS will be required in an approved FMP to have something  
28 the equivalent of an OFL in order to make status determinations  
29 and is that correct? Is that what I heard you say?  
30  
31 **MARA LEVY:** I think they have to have something that they're  
32 going to base an overfishing determination on. Whether they  
33 actually can set an OFL or whether they rely on what they have  
34 in the previous FMP, which is the MFMT, or something like that  
35 would be a decision that would have to be made and so there is  
36 going to have to be something in the FMP that's going to allow  
37 the council to then determine whether overfishing is occurring.  
38  
39 **MIKE SISSENWINE:** Just to respond to my ignorance in this case,  
40 you gave an acronym of what's in the current FMP and what was it  
41 again?  
42  
43 **MARA LEVY:** The MFMT, which is the maximum fishing mortality  
44 threshold.  
45  
46 **MIKE SISSENWINE:** Okay. It's a fishing mortality level?  
47  
48 **MARA LEVY:** Right and the guidelines basically say that each FMP

1 must describe which of the following methods will be used and  
2 whether it's going to be the MFMT or the OFL, but which one of  
3 those the council is going to use to determine whether  
4 overfishing is occurring.

5  
6 **MIKE SISSENWINE:** The council -- You're implying the council  
7 could use a fishing mortality-based method and NMFS might  
8 approve it, knowing that it's totally useless in an operational  
9 sense, because there are no fishing mortality estimates?

10  
11 **MARA LEVY:** I'm not implying anything. I'm just saying that's  
12 what the guidelines say. Whether they can develop the record  
13 for it to make it something that would be approved or whether  
14 they would need to do something else is an issue that would have  
15 to be dealt with.

16  
17 I'm just saying that what they would need to do in terms of  
18 management, I wouldn't want it to affect your decision in terms  
19 of science, meaning whether or not you all can make a scientific  
20 recommendation for OFL is one question and that's the question  
21 you all need to answer. If you can't, you can't, but you  
22 already did and so backing away from it would require some  
23 explanation.

24  
25 What the council ends up having to do in response to that is  
26 sort of a different issue and I don't know what they would need  
27 to do exactly at this point to make it approvable.

28  
29 **MIKE SISSENWINE:** From a scientific point of view, I'm confident  
30 that for most of these species we could do a better job of  
31 recommending a fishing mortality threshold that would define  
32 overfishing rather than a catch, rather than a volume of catch.

33  
34 That's just simply because we know a little bit about the  
35 biology and the life expectancy of the animals and if that were  
36 acceptable, that's what we would have been doing all along, but  
37 we're presuming that an estimate of fishing mortality rate of  
38 0.2 for a parrotfish isn't useful for the purposes of management  
39 unless we can estimate what the fishing mortality is.

40  
41 **MARA LEVY:** Right and I'm not suggesting that you recommend a  
42 fishing mortality. I'm just saying that there's already -- This  
43 is already defined in the SFA Amendment and the guidelines are  
44 very clear that the SSC is to recommend an ABC, which is a catch  
45 level, recommendation.

46  
47 Now, how you get to that ABC, whether you come down from an OFL  
48 or you somehow look at fishing mortality and decide that your

1 ABC fits within there, I don't know how you do it, but I'm not  
2 suggesting that you all recommend a fishing mortality threshold.

3  
4 **MIKE SISSENWINE:** Okay, but the council is going to have to have  
5 something in there that defines status and it's -- The council  
6 is going to have to make a decision on something to define  
7 status and I would contend, and this is a scientific view and  
8 not a legal one, obviously, that a fishing mortality criteria is  
9 not operational, because we can't estimate fishing mortality.

10  
11 It's going to have to use a different criteria. Catch is an  
12 obvious one and then we're back to the same issue. If we don't  
13 give an estimate, then what is the council going to use or  
14 another option is in fact an average size criteria, which is a  
15 lot like fishing mortality, which frankly I think is useful, but  
16 the guidelines don't speak to that at all.

17  
18 **MARA LEVY:** Presumably you would be then recommending -- If  
19 you're not going to recommend an OFL, the presumption from me  
20 would be, and if I'm wrong, I'm wrong, would be that you would  
21 recommend an ABC.

22  
23 In terms of management, that's the number that is going to be  
24 useful for the council, because they're going to need to set an  
25 ACL and it cannot exceed the fishing level recommendation from  
26 the SSC and so it cannot exceed the ABC.

27  
28 Now, whether something is determined to exceed the overfishing  
29 threshold and so it's overfishing for that year is one question,  
30 but really the implications come in if the ACL is exceeded,  
31 because the AMs then come into play.

32  
33 If you're exceeding the ACLs, then there's something indicating  
34 that you don't have the right ACLs and AMs and that's what needs  
35 adjusting. My hope would be that the SSC would come out with a  
36 recommendation for a catch level and that it would be the ABC if  
37 it's not going to be an overfishing level.

38  
39 **MIKE SISSENWINE:** Right and so there are two sort of triggers  
40 that cause negative feedback to the industry, let's say. One is  
41 exceeding the ABC, because that triggers accountability  
42 measures, and the other is exceeding the OFL or whatever the  
43 overfishing definition is, because that requires some action to  
44 do even more than accountabilities, but to end the problem of  
45 overfishing immediately.

46  
47 I guess that puts it in context, to me, about why this is  
48 important. Again, we have guidelines that are pretty clear that

1 ABC is derived from OFL and so we could easily word our advice  
2 such that we don't ever say we recommend this as OFL, but our  
3 record of how we got to ABC is still based on the guidelines and  
4 going to come from some basis of an OFL and for the council to  
5 adopt something that's contradictory to that, even if we don't  
6 recommend it, seems, to me, to be questionable in terms of using  
7 the best available science. It almost seems, to me, like a  
8 semantics discussion more than anything else.

9  
10 **MARA LEVY:** I would hope that whatever they did wouldn't be  
11 contradictory. It would have to be consistent with the ABC that  
12 you recommended, meaning the OFL is not -- It would have to be  
13 consistent with that or the overfishing limit.

14  
15 It would have to be consistent with their prior overfishing  
16 definition that they've already determined in the SFA Amendment  
17 and so it can't just come out of nowhere is what I'm saying. If  
18 it's some undetermined level, presumably you're going to set the  
19 ABC lower than whatever you believe the OFL is, even if you  
20 can't define or quantify the OFL.

21  
22 If the ABC is going to be set somewhere below that overfishing  
23 level, then the council has to decide, without knowing what the  
24 exact OFL is, where they want to set the ACL in response to that  
25 ABC.

26  
27 **BARBARA KOJIS:** Just for a little clarification, when we did the  
28 OFL, we set ABC equal to OFL and the other thing was that it's  
29 the ACL is when you trigger the accountability measures and so  
30 when they reach ABC, you're reaching OFL as well and that's when  
31 you're undergoing overfishing and you have to immediately stop  
32 it.

33  
34 Probably, given the way the system is set up at this stage, with  
35 not timely information coming in, as far as I know, for timely  
36 data coming in as far as what the catch levels are and it's  
37 usually a year behind or something like that, I don't think the  
38 accountability measures would change much whether they were  
39 overfishing or not.

40  
41 The accountability comes into play by reducing the catch the  
42 following year, after you know that you've exceeded your ACL,  
43 and reducing the catch the following year or reducing the  
44 fishing year the following year by whatever it would take to  
45 achieve the ACL. Any other comments or any other -- Does  
46 anybody have any questions? Does anybody want to make a motion  
47 regarding this? Does anybody want to do anything?

48



1 **VANCE VICENTE:** I will say something. I don't know why we're  
2 discussing this.

3  
4 **BARBARA KOJIS:** We're discussing this because this was an issue  
5 that was brought up by the Caribbean Fisheries Management  
6 Council and so that's why we're discussing this. Now, somebody  
7 could just make a motion, if they wanted to, to, in essence,  
8 indicate that they don't feel that we should change OFL and that  
9 we should retract any OFLs or that we should not alter our  
10 previous decision.

11  
12 **MIKE SISSEWINE:** I would comment that the advice we've just  
13 received is we should certainly not alter any previous  
14 recommendations unless we have a scientific basis for doing so  
15 and so we have none on the table at this time.

16  
17 During the course of our meeting, we may receive more scientific  
18 information and make some conclusions to result in some science-  
19 based changes, but from this discussion, we have nothing on the  
20 table and so there's no basis for altering any previous  
21 recommendations.

22  
23 In the future, we could consider the option that our  
24 recommendations explicitly state that we are recommending an ABC  
25 and are silent in terms of a recommendation in terms of an OFL.

26  
27 Now, I'm not sure whether that matters, because we would have  
28 the same scientific record of how we got to the ABC, but if we  
29 desired, based on this somewhat unclear discussion about what  
30 the ramifications are, we could just refrain from formally  
31 attaching the term "recommendation" to OFL. To me, that's  
32 purely a semantic or legalistic issue and I don't mind doing  
33 that, if it in some way would be --

34  
35 **MARA LEVY:** Can I interrupt for a second? I'm not sure if I  
36 heard this correctly, but were you talking about just taking off  
37 the label of a recommendation? If that's true, I'm not sure  
38 that that's really going to do anything if your intent is to not  
39 recommend an OFL.

40  
41 The reason I say that is that the Act basically says that the  
42 councils must develop ACLs that may not exceed the fishing level  
43 recommendations from the SSC. It's the process of developing  
44 those recommendations that I'm concerned with.

45  
46 What you call them will sort of depend back on how they were  
47 developed and so I don't know that you can say that we're giving  
48 you this number but it's not an OFL recommendation or it's -- If

1 you're going to give a fishing level recommendation, the council  
2 can't exceed that in developing the ACLs.

3  
4 If you talk about it in terms of an OFL, but then basically say  
5 we're not going to call it an OFL and we're going to call it an  
6 ABC, from the standpoint of defending that, it would be a little  
7 bit hard, meaning it can't just be the label. It has to be the  
8 basis as well and I don't know if I misheard you, but I just  
9 wanted to throw that out there.

10  
11 **MIKE SISSEWINE:** I think that makes sense to me. That's the  
12 way I would view it too, that the scientific record of whatever  
13 we recommend is inherently part of the best scientific advice,  
14 so that the semantics of what you label it, in my view, wouldn't  
15 matter and so I won't make such a proposal.

16  
17 I do think that we are left with the reality that in a practical  
18 sense we need to start from OFL, because it has an inherently  
19 scientific basis.

20  
21 MSY is defined in the scientific literature and it's well known  
22 scientifically and it has standing. ABC doesn't. ABC is a  
23 creation of the agency and the only scientific literature about  
24 ABC is scientific literature written by scientists who are  
25 responding to the agency's description of it.

26  
27 From a scientific point of view, the process starts with  
28 something that relates to OFL or MSY or something like that.  
29 MSY is in the law and it also scientifically has standing and so  
30 for us to say we're going to just skip all that and start with  
31 ABC and call it a scientific determination is sort of ass-  
32 backwards, frankly.

33  
34 **BARBARA KOJIS:** Are there any other comments? I suggest then  
35 that we take Mike's advice and that we move on to the next topic  
36 and leave our decisions as is, unless something comes up during  
37 the later part of the meeting that indicates that we would like  
38 to change our advice.

39  
40 **MARA LEVY:** Barbara, I'm just going to sign off. If you all  
41 need to talk to me or have any more questions, you can email me  
42 or maybe Graciela can call me.

43  
44 **BARBARA KOJIS:** Thank you very much, Mara, for being here. We  
45 appreciate your comments and clarification.

46  
47 **MARA LEVY:** Okay and you all have a good day.

48



1 landings?

2  
3 **BILL ARNOLD:** I've got a table of landings and a plot of the  
4 landings.

5  
6 **BARBARA KOJIS:** That sounds good, if we could have that.  
7 Graciela, Shenell and Daniel Matos, are they going to be  
8 available to discuss this as well?

9  
10 **GRACIELA GARCIA-MOLINER:** Daniel is somewhere near here and so  
11 he's on his way. We've been trying to reach Shenell for quite  
12 some time. I left a message and I can call her again. She  
13 hasn't sent anything to me yet and so we are trying to reach the  
14 DPNR.

15  
16 **TODD GEDAMKE:** I think it might be helpful, before we even put  
17 this up -- I know that you and I and a couple of others have  
18 been involved in this discussion at all the various meetings,  
19 but I think for our new member and for a couple of others, it  
20 may be really helpful to provide some context, a little bit more  
21 context, on this.

22  
23 I'm not sure if you have a handle on what we're discussing, but  
24 we did revisit at least the fundamental question underlying this  
25 once before and I just thought it might be helpful to have a  
26 little bit of discussion and maybe as Bill gets the landings up  
27 we can take a look at that.

28  
29 **BARBARA KOJIS:** Would you give us the background on that then?  
30 I would appreciate that.

31  
32 **TODD GEDAMKE:** Nicely played, Chair. It's somewhat tied into  
33 the discussion we were just having about setting an OFL and  
34 across the board for the Caribbean species, we have been using  
35 average landings as our proxy to start from for setting OFL.

36  
37 For many fisheries, for virtually all, we don't have the ability  
38 to really pinpoint where the stocks are in relation to MSY and  
39 therefore, to pinpoint an overfishing limit in terms of biomass  
40 and so as we got into setting the ACLs, there was some  
41 discussion about fisheries that were believed to be healthy and  
42 lobster was used as an example for one fishery that the  
43 stakeholders and others believed that the fishery was healthy  
44 and that the OFL should potentially be set higher than the  
45 average landings.

46  
47 There was discussion early on, I believe probably eight months  
48 ago or maybe a year ago, regarding this. The SSC took a look at

1 it and one of the suggestions was instead of using average  
2 landings as our proxy for that OFL, we would take a look maybe  
3 at one standard deviation above that average landings or two  
4 standard deviations above the average landings to set the OFL  
5 and then reduce from there to set the ABC and then pass that on  
6 to the council.

7  
8 I think at our last SSC meeting we had a good bit of  
9 conversation on that and our decision at that time was that we  
10 did not have the statistical basis or the information available  
11 to use any of these other metrics to go above the average  
12 landings in terms of OFL and I think Mike did an excellent job  
13 of summarizing those discussions, which was then presented by  
14 Barbara to the council.

15  
16 As we were finalizing the 2010 and 2011 amendments, it was once  
17 again brought up that lobster should be reconsidered to set the  
18 OFL above the average landings and so I think we're here now  
19 really to take a look back at that decision that we made and  
20 probably get into some discussion as to potentially other ways  
21 of looking at OFL, but as I stated when I started out, I don't  
22 think we have any real new information, other than maybe taking  
23 a look at the length information.

24  
25 The fundamental problem that we're going to have is as a metric  
26 for us to look at, we have a landings series, and thank you very  
27 much, Bill, for putting this up. We can get an average landings  
28 out of this, but what sort of statistically-defensible metric or  
29 what sort of logic can we use if we all agree that this stock  
30 is, quote, unquote, healthy, to change the decision that we  
31 previously landed up?

32  
33 Please, anyone else chime in as I've circled around trying to  
34 summarize there. I just thought it would be important for all  
35 of us to get our heads back into this.

36  
37 **MIKE SISENWINNE:** I think that we agreed, based on the  
38 information available, that the stock is not overfished and it  
39 was healthy. The issue is how healthy? How far is it from  
40 being overfished, because that's what required, really, to say  
41 that this average catch methodology we used is too conservative.  
42 That's where we fall down on any quantitative basis that's been  
43 presented so far and maybe there is one, but we haven't been  
44 presented with it.

45  
46 The conclusion that the stock is not overfished is documented in  
47 the SEDAR report from 2005. That's the determination made  
48 there. Is there a determination that's been done that's local,

1 that deals with the Caribbean? Does anybody know?  
2

3 **TODD GEDAMKE:** Before we go on with that, the 2005 assessment  
4 was revisited and there were problems found in the effort metric  
5 in that assessment and so in the lobster fishery, many of the  
6 lobsters are caught by divers and a lot of that assessment was  
7 based on diver effort and catch rates for divers.  
8

9 One of the problems that we identified in 2007 was that there  
10 was no indication as to actually how much diving time was being  
11 done. There was number of tanks onboard and there was number of  
12 people onboard and so the Center came to the conclusion that the  
13 effort metric was unreliable and does not stand behind that  
14 assessment and so that assessment is not considered to be valid  
15 at this point in time, the final conclusions on that.  
16

17 I think that's important, because that assessment did say that  
18 it was not overfished, but there were some problems in the way  
19 the estimation of the effort metrics were calculated.  
20

21 **MIKE SISSENWINE:** Can I then ask what is the basis for our  
22 conclusion right now that it's not overfished? Is there an  
23 assessment?  
24

25 **TODD GEDAMKE:** There is no assessment right now. I think the  
26 discussion for the -- There is no quantitative assessment on  
27 that one. What the discussion was based on was the fact that  
28 regulations have been in place for a long time and there was  
29 some testimony that the size structure has remained constant  
30 over time and that there's been no significant changes.  
31

32 I think one of other components of the discussion was that  
33 recruitment for the lobster fishery may occur from far-off  
34 places, where there's such a long larval stage, so that the  
35 impact in locally depleting may not be directly related to stock  
36 size and therefore, that that was -- I think those were the  
37 three. Barbara, did I miss any?  
38

39 **BARBARA KOJIS:** No, I think that was it.  
40

41 **MIGUEL DEL POZO:** Basically, we can say then that the  
42 determination about the spiny lobster not being overfished is  
43 based on compliance with the measurements and the feedback from  
44 primary stakeholders then, basically? A second question will be  
45 if we have any idea about the recreational sector on this  
46 particular fishery.  
47

48 **TODD GEDAMKE:** Yes, I agree with your first comment. It is

1 based primarily on feedback and discussions on people's  
2 observations. The assessment is not standing. The recreational  
3 fishery, one of the -- For the lobster in particular, we've  
4 collected information since the late 1970s or early 1980s in the  
5 U.S. Caribbean and lobster is one of the first where we actually  
6 had species-specific information that was coming in.

7  
8 We do have the longest time series of species-specific for that,  
9 but we still are lacking any significant information on the  
10 recreational fisheries. In the Virgin Islands, we virtually  
11 have nothing available. We have a couple of spot interviews in  
12 places and some descriptions from some of the sociology and  
13 anthropology of the lobster fishery and in Puerto Rico, we have  
14 information available for the last four or five years.

15  
16 **BARBARA KOJIS:** Not on lobster.

17  
18 **TODD GEDAMKE:** But not on lobster and so you've identified a  
19 hole in our information there.

20  
21 **GRACIELA GARCIA-MOLINER:** In terms of the regulations, on  
22 reviewing everything that has been done for the lobster, since  
23 1936, Puerto Rico has had a ban on the take of buried female  
24 lobsters, specifically for spiny lobster.

25  
26 Since 1972, the Virgin Islands has had a minimum size limit of  
27 3.5-inch carapace length and at that time, they had a minimum  
28 size for the tail of 5.5 inches.

29  
30 The prohibition on the take of buried females had been in place  
31 since the 1970s and the FMP for the spiny lobster came into  
32 place in 1985 and so in terms of the size limits and the  
33 landings the lobster whole and the ban on taking buried females  
34 for the three jurisdictions, it has been in place since 1985.  
35 That's basically when you begin the clock, but it has been for  
36 all of the three jurisdictions.

37  
38 In terms of traps, although Puerto Rico never really had a mesh  
39 size limit for traps until 2004 that is in the law, the federal  
40 government and the Virgin Islands have had an increasing mesh  
41 size minimum size since the 1980s. Now it stands at 1.5-inch  
42 hexagonal or two-inch square mesh size. The regulations for  
43 traps since 2004 or so have been in the law, actually in the  
44 law, compatible for the three jurisdictions.

45  
46 **BARBARA KOJIS:** I would just like to mention that fact that like  
47 in the -- I don't know whether this is true of Puerto Rico, but  
48 in the U.S. Virgin Islands, where trap fishing occurs directed

1 at spiny lobster, they use traps, plastic lobster traps, that  
2 have slats in them and so the mesh regulation doesn't really  
3 pertain very much to spiny lobster, except for the fact that  
4 some fish traps are modified for taking spiny lobster as well as  
5 fish and those then have two-inch mesh in St. Thomas/St. John  
6 and at least an inch-and-a-half hex in St. Croix.

7  
8 **JORGE GARCIA:** Just a comment on Miguel's question is that one  
9 of the parameters that we are lacking not only for lobster, but  
10 for most of the fisheries, is the parameter of effort.

11  
12 That's why we use the total landings and the annual catch as a  
13 proxy for MSY and that is, in my opinion, the biggest  
14 uncertainty in all this analysis, because we do not -- Those  
15 annual catches, that is what is reported to be landed, but we  
16 don't know if much more or much less or at least much more is  
17 being landed and not reported and so we don't have data on  
18 unreported lobster or any other catch.

19  
20 In addition, we don't know how variable has been the effort  
21 across those years, because if you see that there are management  
22 initiatives, regulations, in certain parts along the entire  
23 process, which have a direct implication in terms of the effort  
24 that the fishermen report that catch.

25  
26 My assessment here would be to look at the TIP data on lengths,  
27 but I don't see that in the SEDAR report and I wanted to ask  
28 Todd if he has any data on lengths that we can look at, because  
29 that has been actually our heaven for these analyses.

30  
31 When you have all these very huge uncertainties in terms of  
32 effort, really the best effort to look at to see what the health  
33 of the fisheries is, it's to look at the length data and so  
34 that's what I was going to propose, that we take another look at  
35 that and make sure that our assessment in terms of the resource  
36 not being overfished had some scientific -- A more solid  
37 scientific base that just the annual catch data, which, in my  
38 opinion, is highly uncertain in the analysis.

39  
40 **BARBARA KOJIS:** Just a couple other questions. The Puerto Rico  
41 expanded data, has there ever been a revision of the expanded  
42 data or another expansion taking place that makes the expansions  
43 between the -- I think it's before 2003 or something like that  
44 and after 2003 the same criteria was used for the expansion?  
45 Was that ever done?

46  
47 **TODD GEDAMKE:** I would love to wait for -- Daniel is coming and  
48 I would love to wait to have this discussion when Daniel gets



1 here, because those expansion factors are derived from the local  
2 territorial folks.

3  
4 We did, at the last meeting, present the methodologies behind  
5 the two expansion factors and we did the one, but I would really  
6 like to wait for his comments on where we stand with that, but I  
7 guess what I do know is that no, we have not used one  
8 methodology to go all the way back through the time series using  
9 the current, because I don't think that information is  
10 available, but once again, we'll wait for him to clarify on  
11 that. I'm not sure we have comparable methodologies for the two  
12 time series, but let's wait for him to clarify that.

13  
14 **BARBARA KOJIS:** I would just like to mention another thing is  
15 that while in the Virgin Islands it looks like fishermen have  
16 been, through the period of time, which is a much shorter period  
17 of time and I think it's 2000 or 1999 to 2008 or 2009, which is  
18 the basis for the average catch for each of these groups, the  
19 amount that -- The fishermen were catching lobster that were 3.5  
20 inches and very few of them were under the 3.5-inch carapace  
21 length.

22  
23 In Puerto Rico, there were periods of time in this data where  
24 there were up to 30 percent of the lobster being caught were  
25 undersized and so some of the catch levels here, you'll notice  
26 that they're down in more recent years.

27  
28 I think that's possibly partly because, and it could just be a  
29 supposition, and this is something probably to talk to Daniel  
30 about, but it's because fishermen are not catching so many  
31 undersized lobster anymore and so the level is down to 11  
32 percent or something like that. Some of the higher catch rates  
33 may have been because of the fact that they were capturing  
34 undersized lobster in previous years.

35  
36 **MIKE SISSEWINE:** First, a question of Todd and that is Todd  
37 mentioned that the Center has done some more work on the CPUE  
38 and concluded that it's not valid the way it was used in the  
39 assessment. Is that documented somewhere?

40  
41 Is there a formal document available? It is problematic if  
42 you've got the 2005 assessment, which is cited in a letter to  
43 the Secretary of Commerce, and there isn't appropriate  
44 documentation that there's new information. That's my first  
45 question, which apparently the answer is yes, there is a  
46 document.

47  
48 **TODD GEDAMKE:** The answer is I will follow up on that right now.

1 I think we revisited that in 2007 and I will follow up on that  
2 and see exactly what the answer is.

3  
4 **MIKE SISSEWINE:** I think it is important, because, as I say,  
5 the industry interests have cited a document that has standing  
6 and if there's going to be response, it would be helpful if  
7 there's a similar document.

8  
9 The comments that have been made about the stability in the  
10 catch and no change in size composition are various things that  
11 would indicate why the industry is generally viewing that there  
12 isn't a problem with this fishery.

13  
14 I could actually make the same statements about the northern  
15 lobster fishery and if I didn't know the assessment, I could  
16 come to the same conclusions. That is the catches have held up  
17 and size composition hasn't changed much and so on over fifty  
18 years.

19  
20 When you actually do the assessment, it turns out the fishing  
21 mortality is about twice FMSY and so there's a lot of  
22 opportunity for fisheries to be nice and stable. It also has  
23 the same regulations. You can't take buried females and there  
24 are minimum sizes and there are ring sizes.

25  
26 All of these sort of restrictions that have been described as  
27 applying here exist in that fishery, but when you actually do a  
28 quantitative assessment, you conclude that it's still overfished  
29 in terms of the fishing mortality, by a factor of two, and so I  
30 simply don't think that the evidence that's been presented is --  
31 I guess it's reasonably convincing that things are stable, but  
32 it really doesn't speak to the issue as to whether fishing  
33 mortality is too high. That's a separate question.

34  
35 Now, we've accepted, as a committee, that fishing mortality  
36 isn't too high and so I'm not sure what we're arguing about, but  
37 that's the basis of our advice.

38  
39 The problem that people, and I use the term "people" just  
40 loosely and I'm sure who, are having with the advice is that  
41 they simply don't think it's sufficient to advise for a stock  
42 that isn't overfished an ABC level that's associated -- It's  
43 basically equal to recent average catch and they've pointed out,  
44 and Roy has himself, that that can create certain dilemmas.

45  
46 Suddenly you find that -- You would expect a large number of  
47 times without any change in the status of the fishery that you  
48 would be defining it as overfished, because of just random

1 variations, and that's factually correct, but I don't think this  
2 is a scientific problem.

3  
4 I think there's a problem that -- There's a scientific problem  
5 in that there's lack of information to do anything better, or at  
6 least we haven't had anyone propose anything better, and there  
7 are policy implications to having this strict definition of  
8 overfishing with various mandates to take corrective action in  
9 light of this very uncertain and limiting information.

10  
11 We're not arguing about whether the stock is overfished or not.  
12 We've accepted what information there is, which the industry has  
13 confirmed that it's not, and as a result of that, we're left,  
14 unless somebody can quantitatively say how much underfished it  
15 is, we're left with our position of basically saying the best we  
16 can do to offer ABC advice is something based on average catch.

17  
18 **JORGE GARCIA:** I just want to make the comment that the fish  
19 traps, which is the most popular method for capturing lobster in  
20 Puerto Rico, the amount of traps have declined over the years  
21 substantially and so in terms of fishing mortality, the method  
22 that used to catch most of the lobsters has declined over the  
23 years to very low levels right now.

24  
25 That trend is probably also working towards a reduction of the  
26 fishing mortality, in terms of Puerto Rico. I don't know about  
27 for the rest of the USVI, but for Puerto Rico, that seems to be  
28 the case.

29  
30 **MIGUEL DEL POZO:** I just wanted to maybe add to your comment  
31 about the trends on the landings, just to basically confirm  
32 that, based on my observations, that could be the case. In the  
33 field, I haven't seen really many undersized, probably none,  
34 undersized lobsters in the fishing villages and so I agree with  
35 that. That could probably explain the lower landings.

36  
37 Still, I don't get that peak. It's a very, very high peak and I  
38 have no clue. Probably Daniel could tell us about that, but I'm  
39 not sure if we should look for a biological explanation for that  
40 or maybe more of a social explanation for that.

41  
42 **BARBARA KOJIS:** Just to mention again that there were different  
43 ways of calculating the expansion for I think from 2003 onward  
44 than there was before and so why you would suddenly have a peak  
45 in 2005, I don't know.

46  
47 The different ways of doing it, one I think was by the number of  
48 fishermen reporting before 2003 and afterwards, they went out to

1 the villages and found out from each fisherman how much they  
2 were reporting and how much they were catching and the number of  
3 fishermen that were out there. I'm not exactly sure how that  
4 worked, but Todd may be able to explain it better.

5  
6 **TODD GEDAMKE:** First of all, that peak is unrelated to the  
7 expansion factor issue, the fact that that visually looks so  
8 much greater and is much greater. That was definitely something  
9 that when we plotted that up, it's a cause for concern and  
10 question.

11  
12 At the last SSC meeting, we had a number of people discuss that  
13 that was the best year that the lobster fishermen had ever seen  
14 and so there's actually on-the-ground evidence saying that that  
15 was just a gangbuster year and so they had a fantastic year in  
16 that one. The information that's coming from the fishermen was  
17 that that is a valid peak. It still is extremely high.

18  
19 The expansion factor changes do occur at approximately that time  
20 and I think what Barbara is touching on is if you look at the  
21 last five data points in there, they're relatively stable, but  
22 slightly lower than the previous.

23  
24 That peak really throws your eye off in looking at this, but you  
25 have a slight reduction, from approximately an average of around  
26 350,000, to an average of 250,000 or 275,000, in the last five  
27 years. You've got that average right in there, about thirty-  
28 five, and then you have a little slight drop there. That's more  
29 or less due to the differences in the way the expansion factor  
30 was calculated.

31  
32 Once again, I will give a very brief summary of the expansion  
33 factor calculations and Daniel will once again clarify it when  
34 he gets here.

35  
36 What was done was an interview-based expansion factor, where the  
37 territorial agents would go out to different places on the  
38 island and determine the percentage of fishermen that were  
39 reporting and that percentage of fishermen reporting was then  
40 used to calculate up to the total amount.

41  
42 In 2005, they actually started doing these calculations based on  
43 regions of Puerto Rico and there's a regionally-specific  
44 expansion factor.

45  
46 For some communities, reporting rates were very high and in  
47 other communities, the fishing reporting rates were much lower  
48 and so they took into account this regional factor and then it's

1 also a weight-based, but I would really want Daniel to clarify  
2 that, but there was a slight change in that methodology at that  
3 point in time.

4  
5 **BILL ARNOLD:** I'm not disputing what the fishermen said, but the  
6 thing I find odd about that, Todd, is that it wasn't just the  
7 lobster fishery that had a huge peak in 2005, but it was all of  
8 these fisheries, which unless everybody had a banner year in  
9 2005, that just seems odd that something else wasn't going on  
10 and I agree with you that it would be really nice to have Daniel  
11 here and we need for him to address that, because it's just not  
12 clear to me.

13  
14 **BARBARA KOJIS:** My suggestion is that we take a break now and  
15 then hopefully Daniel will be here. We'll take a fifteen-minute  
16 break. There he is. Let's just take a ten-minute break, since  
17 Daniel is here, and then come back and that will give Daniel an  
18 opportunity to set up and we can ask him and pummel him with  
19 questions. Thank you.

20  
21 (Whereupon, a brief recess was taken.)

22  
23 **BARBARA KOJIS:** I would like to reconvene the meeting. It looks  
24 like Daniel is ready and this is Daniel Matos and he's going to  
25 be speaking about the -- He's got a lot of information up there  
26 and so, Daniel, could you start? Thanks for coming.

27  
28 **DANIEL MATOS:** Thank you and first, I want to apologize for my  
29 lateness this morning. I'm sorry, guys. Let's talk a little  
30 about the last five or six years of the Puerto Rico landings and  
31 also data from the biostatistics program, from the trip  
32 interview program, the TIP.

33  
34 Let's look in this table. This is the landings, reported by  
35 species, by coast in Puerto Rico during 2007. For the last  
36 years in Puerto Rico, the commercial fishers changed their catch  
37 from reef fish mostly to shellfish and here is the total and you  
38 will see the lobster, for the 2007, is 159,000 pounds and conch  
39 is 143,000 pounds.

40  
41 This is the most species catch in Puerto Rico, reported. For  
42 the last five years, lobster represents probably 12 percent of  
43 the total catch in Puerto Rico, 10 or 11 percent of the total  
44 catch in Puerto Rico. Conch is probably 9 percent. You see  
45 1.24 million pounds and lobster is 11 or 12 percent. This is  
46 for 2007.

47  
48 Then in the next table, we will see the reports for the year --

1 This is 2008 and again, you will see lobster is 167,000 pounds  
2 and it is very important. For the year 2008, something very  
3 interesting occurred. For the last months, from September,  
4 October, November, this was a very interesting year in lobster  
5 catch.

6  
7 From the Puerto Real and Cabo Rojo, and this is the most active  
8 fishing center in Puerto Rico, where more commercial active  
9 fishers are and they catch probably 30 percent of the total  
10 catch of Puerto Rico in that area and off the Puerto Real area,  
11 the commercial fishers catch great quantities of lobster, spiny  
12 lobster.

13  
14 The fish houses were full and they said to the commercial  
15 fishers to stop catching commercial lobster, because we are not  
16 able to sell it and you are too fast and the catch is too good.

17  
18 What happened was the commercial fishers continued to fish the  
19 lobster and they were going directly to the restaurants and so  
20 they also filled the freezers of the restaurants and now the  
21 fish houses can't sell to the restaurants because the  
22 restaurants have a lot of lobsters at a better price and all the  
23 market was stopped and so the next step was the commercial  
24 fishers went to the streets and sold the lobster to the people  
25 cheaper and so this interesting marketing condition, because of  
26 the good catch of the spiny lobster, occurred in 2008 and also  
27 we saw that in 2005 and so some years, the catch is really,  
28 really good and it stops the marketing. This is for 2009 and,  
29 again, you will see the lobster is close to 11 percent of the  
30 total reported catch in Puerto Rico.

31  
32 **BILL ARNOLD:** Are these expanded landings or reported landings?

33  
34 **DANIEL MATOS:** This is just reported landings. Thank you.  
35 That's a very good point. As you can observe, the scuba divers  
36 are the most active and have good earnings in the commercial  
37 fishery in Puerto Rico and the other group are the deepwater  
38 snappers and so this is the most active and most successful  
39 commercial fishery in Puerto Rico for the last ten years.

40  
41 One more for 2010. This is lobster here and this is by coast.  
42 This is east coast, north coast, south, and west. Again, it's  
43 probably 12 or 13 percent of the total catch reported. Bill  
44 mentioned the expansion factor or the correction factor for  
45 those years and it's close to 50 percent. We can multiply by  
46 two or divide by 0.5 to have a good idea of the landings.

47  
48 Let's see some data of the biostatistics. I don't know if you

1 are able to see those numbers, but this is the carapace length.  
2 This is the average, the standard deviation, and this is the  
3 number of spiny lobster measured.

4  
5 In 2006, we were able to measure or collect data from 2,024  
6 individuals and in 2007, 1,937 and in 2008, it was 1,260 and in  
7 2009, it was 1,700 and in 2010, it was 1,459. The carapace  
8 length is very similar at 102 millimeters. The last two years,  
9 it was one more millimeter and it's not a big difference.

10  
11 **WALTER KEITHLY:** Daniel, can you put that in perspective for me  
12 in terms of what is the minimum size?

13  
14 **DANIEL MATOS:** The legal size is 89 millimeters, 3.5 inches or  
15 89 millimeters.

16  
17 **TODD GEDAMKE:** Walter, in relation to that question, the minimum  
18 size, there was some concern brought up before that changes in  
19 the retention of buried individuals or small individuals -- I  
20 have some plots ready to go that we can look at after that look  
21 at mean size with a cutoff at the minimum size, from 3.5 and  
22 above. That should eliminate those problems when we look at  
23 this later on.

24  
25 **WALTER KEITHLY:** If I'm reading this correctly, the average size  
26 at harvest is still relatively high compared to the minimum  
27 legal size and is that correct?

28  
29 **DANIEL MATOS:** I think these are the legal and most of those are  
30 the legal and the rest are legal. For 2006 and 2007, you can  
31 see the frequency distribution by the carapace length and so  
32 it's around 6 percent of the total catch were illegal.

33  
34 **MIKE SISSENWINE:** The legal size is about 90 millimeters and  
35 most of them are gone by 130 millimeters and how many years does  
36 it take from a lobster to grow from 90 to 130 millimeters? Do  
37 we know?

38  
39 **DANIEL MATOS:** I can't remember this fact, but I can mention  
40 that the minimum legal size was chosen because the lobster were  
41 able to be adults or mature at three inches and so 3.5 gives  
42 them a chance to make a reproduction at least once. This was  
43 the reasoning in that case, but I can't remember the age and I'm  
44 sure it's in some paper, I'm sure of that.

45  
46 For 2007, you will see it's very similar, again. There are some  
47 bigger animals here, maybe one or two. We were able to observe  
48 in the data probably 200 millimeters, big males, a couple of

1 them, but most of them are around here.

2  
3 Here's 2009 and here is 2010 and I remember in 1986, probably 20  
4 percent of the lobster were below the legal size and so we see  
5 an improvement in that and I have to mention the DNER Rangers,  
6 for the last years, have enforced these regulations and they  
7 were successful in motivating the commercial fishers to avoid  
8 catching the small ones.

9  
10 **GRACIELA GARCIA-MOLINER:** Daniel, this is both divers and traps?

11  
12 **DANIEL MATOS:** Yes, this is everything. Later, we will see by  
13 gear here, but this is everything. In the next slide here, we  
14 will see the difference between sex.

15  
16 This is males and females and you can see the carapace length  
17 frequency distribution for the five years. You will see the  
18 males and the females and the illegal ones are on here and 6  
19 percent probably or 8 percent here and going down, to the left,  
20 to see -- Here, we can see both together. The blue are the  
21 males and the females are red. The males are the bigger  
22 animals.

23  
24 Here is the average lobster carapace length by sex and also, we  
25 can see here the standard deviation. Males are bigger than  
26 females. I think that's all for that and are there any  
27 questions about that?

28  
29 **MIKE SISSENWINE:** It's not a question, but a comment again.  
30 Just my quick glance at these indicates that the abundance,  
31 relative abundance, goes down by about a factor of two every ten  
32 millimeters, just looking at those roughly, and Todd just looked  
33 at a growth function that would indicate they grow about fifteen  
34 millimeters a year, fifteen millimeters roughly.

35  
36 It means, very crudely, the number of animals is halving or more  
37 per year and that's a fairly high total mortality rate. That's  
38 what this is indicating, to me.

39  
40 Again, I'm using my analogy to my experience with northern  
41 lobsters, where once they become legal, most of them disappear  
42 within a couple of years. That's about what this is saying as  
43 well and so just as a gut reaction to these length composition  
44 data, unless for some reason the gear is excluding the larger  
45 animal, and that would be another explanation, this certainly  
46 wouldn't convince me that there's substantial under-fishing  
47 relative to MSY.

48



1 **WALTER KEITHLY:** Do the larger animals move to deeper waters?  
2  
3 **MIKE SISSENWINE:** That's another possibility.  
4  
5 **WALTER KEITHLY:** I thought I had read that somewhere some time  
6 ago, which may --  
7  
8 **MIKE SISSENWINE:** That's another factor, yes.  
9  
10 **BARBARA KOJIS:** When you say deeper waters, are you talking  
11 about 500 or 600 feet or 200 meters? Fishing occurs, in the  
12 Virgin Islands, across the shelf, to the shelf edge, and that's  
13 in 150 or 160 and in some areas it's 200 feet of water. I don't  
14 know what happens in Puerto Rico, if fishermen fish for lobsters  
15 off the shelf edge. You have a shallower shelf in many areas.  
16  
17 **DANIEL MATOS:** To my knowledge, most of the lobster fishery is  
18 in the coral reef area. They are probably -- The divers, who  
19 are the people who most catch the lobster, they are sixty to  
20 eighty feet or something like that.  
21  
22 In fathoms, we are talking about ten to twelve or thirteen  
23 fathoms and we will see, in the next slide, the traps and I have  
24 to mention the trap fishery in Puerto Rico has been decreasing  
25 for the last twenty years and so the impact is not too big now.  
26 It's a little impact now.  
27  
28 I think it's continued to be significant, but it's decreasing  
29 and I talked to some lobster trappers in the last two weeks and  
30 they mentioned to me that they are fifteen to twenty fathoms and  
31 no more than that and they are using mostly the fish traps to  
32 catch the lobster because of this depth and the topography of  
33 the area, coral reefs and everything.  
34  
35 **MIGUEL DEL POZO:** I have a question about the charts. The  
36 second range goes from 81 millimeters to 90 and I just want to  
37 know the logic behind that range, because it doesn't tell us  
38 much about the undersized ones, since 89 is --  
39  
40 **DANIEL MATOS:** I think there was one or two lobsters measured in  
41 this size and that's why we have it, is because we have little  
42 data. We cannot see the data here, but it's because of that.  
43  
44 **MIGUEL DEL POZO:** But is it possible to maybe just have a range  
45 that goes from 89 to something else? Do you know what I'm  
46 saying, because it's like grouping legal and undersized ones.  
47  
48 **DANIEL MATOS:** We try to collect all the information that the

1 commercial fishers know the port samplers -- They know we are  
2 not going to give a fine or something like that and so sometimes  
3 we are able to measure small animals. They trust in us, but  
4 that's why we are having --  
5  
6 **MIGUEL DEL POZO:** My question is more about why not than  
7 breaking that range down into the legal and illegal ones,  
8 because that doesn't give us a clue, really, about the  
9 undersized ones.  
10  
11 **DANIEL MATOS:** It is possible that some guys are able to catch  
12 illegal lobster and they try to avoid the commercial fishers.  
13 That could happen.  
14  
15 **BARBARA KOJIS:** A question. Do you have data on just what the  
16 percentage of illegal-sized lobsters is being harvested today?  
17  
18 **DANIEL MATOS:** From our collections?  
19  
20 **BARBARA KOJIS:** Yes.  
21  
22 **DANIEL MATOS:** Yes, we have information.  
23  
24 **BARBARA KOJIS:** Do you have that on the graph there or you just  
25 have it on the top of your head?  
26  
27 **DANIEL MATOS:** No, I have to check the data, but it should be  
28 somewhere here. I have to check this later, but she will be  
29 here and if not, I can call the office and get the information,  
30 but I remember the percent was 6 percent or something like that.  
31 Any other questions about the sex frequency distributions?  
32  
33 **BARBARA KOJIS:** I just wanted to comment that from the  
34 literature I've read, female lobsters don't grow as fast as male  
35 lobsters, from my understanding, and so part of the reason that  
36 you've got this discrepancy here, for those of you who may not  
37 be familiar with it, is because of the fact that the female  
38 lobsters are growing more slowly.  
39  
40 **DANIEL MATOS:** It's the nature of things, the nature of fact.  
41 Let's see by gear. Here we have for the last five years and  
42 this is for traps. We have fewer lobster traps and so we  
43 decided to put together the information.  
44  
45 As I mentioned before, they are fished around ten to twenty  
46 fathoms and here are the scuba divers, who are mostly between  
47 ten to twelve or thirteen fathoms. I just wanted to mention the  
48 number of individuals in the trap fishery you will see is small

1 numbers and the scuba are bigger numbers. This is also because  
2 of the number of traps are -- The fish trappers are decreasing.  
3  
4 On the other hand, the scuba divers are easier to interview,  
5 because there are more scuba divers in Puerto Rico than traps.  
6 However, again, it's a very interesting difference here.  
7  
8 **WALTER KEITHLY:** Can I ask a real quick question? Are those  
9 numbers that we see representative of the catch by gear? In  
10 other words, like in 2010 traps, 177 interviews I guess it was  
11 for samples versus 1,223 for scuba. Does that estimate then  
12 that roughly 20 percent of the catch is from traps anymore?  
13  
14 **DANIEL MATOS:** Could you repeat the question, please?  
15  
16 **WALTER KEITHLY:** Are these numbers that you're showing -- You  
17 may have a table on it, but do you have a breakdown of the catch  
18 by gear? In other words, these numbers in 2010 has 177 for  
19 traps, interviews or sample size, I guess, but --  
20  
21 **DANIEL MATOS:** It's the number of lobster measured, 177.  
22  
23 **WALTER KEITHLY:** 177 lobster measured by traps versus 1,223 for  
24 scuba and is the inference there that roughly 85 percent of the  
25 2010 catch was from scuba?  
26  
27 **DANIEL MATOS:** I see your question and I think it's probably 20  
28 percent to 80, yes. It's very close to that. Let's see it by  
29 coast and here is the east coast and you will see the number of  
30 individuals in the east coast, 1,000 individuals. On the north  
31 coast, it's only 363, because the north coast is the tourist  
32 fishing coast in Puerto Rico, for many, many reasons. The south  
33 coast is 2,000 and close to 5,000 on the west coast.  
34  
35 Here, you can see the frequency distributions and it's very  
36 interesting. The east coast has more individuals. The north  
37 coast was very little and the south coast and the west coast, we  
38 have a better distribution and again, we see larger individuals  
39 on the west coast, but the illegal individuals continue to be 6  
40 percent or something like that.  
41  
42 In this chart, we can see by year, by coast, and the standard  
43 deviation. The west is a very interesting trend over the last  
44 two years and the south -- The north, maybe it's because of the  
45 number of samples.  
46  
47 **BARBARA KOJIS:** Was there any significant difference in the  
48 sizes between the east, south, north, and west coast? Did you

1 do a test for that?  
2  
3 **DANIEL MATOS:** I didn't have time to test that.  
4  
5 **BARBARA KOJIS:** It looks like a high degree of variability.  
6  
7 **DANIEL MATOS:** I expect to see a difference between the coasts,  
8 but I didn't have a chance to do the test. Basically, that's  
9 what I brought today and so if you have more questions --  
10  
11 **BARBARA KOJIS:** Does anybody have any questions of Daniel?  
12  
13 **TODD GEDAMKE:** Just to clarify, I'm looking through the TIP  
14 database and for 2008, could you pull up the distributions you  
15 have for 2008?  
16  
17 **DANIEL MATOS:** Okay.  
18  
19 **TODD GEDAMKE:** That's all gears combined?  
20  
21 **DANIEL MATOS:** This is 2008 and just one year.  
22  
23 **TODD GEDAMKE:** Okay. I've got a number of records that are in  
24 the 300-millimeter range for 2008.  
25  
26 **DANIEL MATOS:** 300?  
27  
28 **BARBARA KOJIS:** That can't be right.  
29  
30 **TODD GEDAMKE:** Surprisingly, the range jumps up and they're less  
31 and less frequent as you get up the larger sizes, but there are  
32 individuals that are in the 200 -- It's almost all -- There are  
33 some St. Thomas/St. John, but it's mostly Puerto Rico and so  
34 there's 250 or 270 individuals that are -- Just to visualize  
35 that, that puts you at the twelve or thirteen-inch carapace  
36 length.  
37  
38 **DANIEL MATOS:** That's too big, yes. I observed those outliers  
39 and I believe the information -- I checked with the port  
40 samplers and they thought it was a mistake or data entry or  
41 something like that and so I didn't use the outliers.  
42  
43 **TODD GEDAMKE:** That's kind of my question, because all the  
44 records are for -- These about 300 records, they are deemed  
45 valid and I was just wondering what you used.  
46  
47 **DANIEL MATOS:** I eliminated those 300 records, yes.  
48

1 **TODD GEDAMKE:** What was your criteria for eliminating an  
2 outlier? Was it just a strict size?  
3

4 **DANIEL MATOS:** I observed the numbers were extreme and I talked  
5 to the port samplers and they thought it was an error. We  
6 checked some of the data and it looked like we had some data  
7 entry errors and so that was my criteria.  
8

9 **JORGE GARCIA:** I just wanted to comment that I've been working  
10 on deep mesophotic reefs and although lobster are not very  
11 common there, when we get to see them, they are huge lobsters  
12 and the 300 millimeter doesn't seem impossible to me at all.  
13

14 In fact, that's about probably eight or a nine-pound lobster and  
15 we have taken -- I have seen lobster there at twelve pounds and  
16 so they grow even bigger than that and so the 300 millimeter,  
17 although I can tell you they are rare, they are not -- They go  
18 beyond that size and that's not the absolute maximum size for  
19 spiny lobster.  
20

21 **TODD GEDAMKE:** I'm glad you said that, because I've caught them  
22 that size myself and was wondering if there was a criteria that  
23 you were using, but when we look at it, we can see if there's  
24 any question.  
25

26 **DANIEL MATOS:** There was how many, four or five of that size or  
27 maybe more?  
28

29 **TODD GEDAMKE:** About 300.  
30

31 **DANIEL MATOS:** 300?  
32

33 **TODD GEDAMKE:** I'll give you an exact number in one second.  
34 Over 200 millimeters, there's 230 individuals.  
35

36 **DANIEL MATOS:** When I checked the data, it was less. Anyway, I  
37 don't know why we have some differences sometimes.  
38

39 **TODD GEDAMKE:** That's the whole database and so it's not a huge  
40 issue and I think if Reni -- I'm in agreement that those are --  
41

42 **DANIEL MATOS:** Is that for five years or more?  
43

44 **TODD GEDAMKE:** It's the entire database for the U.S. Caribbean  
45 and I was just doing a QA/QC outlier double-check before I put  
46 some stuff up here and no, I think that in the spectrum of  
47 39,000 individuals in the database, having 200 that are of those  
48 extremely large sizes is not unrealistic, but I just didn't see

1 them represented here as one or two individuals and your scale  
2 cuts off at 160 and so I was just wondering.

3  
4 **DANIEL MATOS:** Here are bigger than 160 and there are some of  
5 200 and we can see that in the data.

6  
7 **BARBARA KOJIS:** Any other questions? Daniel, thank you very  
8 much. Todd, do you want to present your information?

9  
10 **TODD GEDAMKE:** I apologize for working out of SAS here, but I  
11 wanted to make sure that I was using the most current  
12 information and also, I've got the codes all set up if anyone  
13 wants to take a look at it in any slightly different way and we  
14 can flip it around or remove any above a certain size and so on.

15  
16 Just to give you an idea, but what I've done is really kind of  
17 try to track size changes over time and using every available  
18 individual measured. As I mentioned, there's about 39,000  
19 records total for the U.S. Caribbean and I've broken this up by  
20 island group and also by gear type.

21  
22 I think looking at size for gear type is important. As I think  
23 Mike and Walter just mentioned, if a trap fishery is excluding  
24 the larger individuals by let's say funnel size, you may not  
25 pick up those larger individuals, whereas a spear fisherman or a  
26 hand diver is not going to let the largest lobster go by him and  
27 so your selectivity for the largest lobsters is not going to be  
28 as much of a factor, unless it is in deeper water, and so the  
29 selectivity could be slightly different.

30  
31 There was also some concerns regarding the changes in retention,  
32 that with time individuals may not be retaining some of the  
33 smaller individuals and so for each of these plots -- Can  
34 everyone see this here? This is an LC and so this means that  
35 I've calculated mean length based on individuals only above a  
36 minimum size of 75 millimeters, in this case. I started at 75  
37 and I went up to 90.

38  
39 I think we can just look at the 90, but if people have questions  
40 and let me just explain these graphs are all set up the same  
41 way. This gives the minimum size cutoff and this is Puerto Rico  
42 and this by hand and it's Caribbean spiny lobster.

43  
44 The scale here goes from 1978 to 2010 and then the range is  
45 automatically generated based on the size composition and this  
46 is why I just asked that question about large individuals,  
47 because in 2008, there are a number of these really large  
48 animals having been caught. This really sticks out, to me, as a

1 strong outlier for this one year.  
2  
3 We'll go through it and I'll just flip through these and then if  
4 people have questions, then we can go back and take a look at  
5 them and so there's a three-step process here.  
6  
7 This is Puerto Rico by hand and this is Puerto Rico pots and  
8 traps. Once again, interestingly, you have a couple of these,  
9 2007 and 2008, that also fall high. I have no idea what's going  
10 on with that.  
11  
12 This is St. Croix by hand, spiny lobster. It's relatively  
13 consistent across the board. Note the range. The range does  
14 change slightly, but this is one centimeter right here and so  
15 the size over time really hasn't changed.  
16  
17 This is St. Croix pots and traps. It's small sample sizes in  
18 the most recent years and so there's lots of noise and there's  
19 very little to take home from this.  
20  
21 This is St. Thomas/St. John by hand divers and no records after  
22 1987 for by hand, but for pots and traps in St. Thomas/St. John,  
23 we've got 600 or 700 individuals captured there, but in St.  
24 Thomas/St. John, there is an actual slight decline that is  
25 picked up in length over the time period, from 120 here to about  
26 100 and so a two-centimeter over the whole time period, about a  
27 two-centimeter reduction.  
28  
29 I'm going to just skip the 80 and let's go down to the minimum  
30 size plots. I just did this to see how much it would affect --  
31 This is 90 and I can't really see it on my screen here, but this  
32 is 90.  
33  
34 This is the size of individuals that are above the minimum size.  
35 In Puerto Rico, by hand, once again, it's all within that one-  
36 centimeter range, except for this one outlier in 2008. Puerto  
37 Rico pots and traps, once again, it's all about the same, except  
38 for 2006 and 2008, but this is only forty-eight lobster and this  
39 is 250 lobster and a handful of individuals at 300 millimeters  
40 are going to drive this up.  
41  
42 St. Croix and divers and once again, one-centimeter range is  
43 here to here. There's some relatively low samples at the  
44 beginning, a little drop, but everything from 81 on is all in  
45 this relatively flat range and St. Croix pots and traps, once  
46 again, it's low numbers of samples measured in recent years, but  
47 look at the scale here. Your scale here is also -- This is one  
48 centimeter from here to here and so it's just noise in 1.4

1 centimeters.  
2  
3 St. Thomas/St. John, nothing in recent years. St. Thomas/St.  
4 John pots and traps, the range here is from 100 to 120 and you  
5 do have a cluster up at that 120-millimeter and then a little  
6 bit lower. Once again, a slight reduction, maybe a centimeter  
7 or a centimeter-and-change, in the most recent years.  
8  
9 All in all, the size, other than St. Thomas/St. John, which  
10 shows a slight reduction, you have pretty flat time series  
11 across the board in these. I can look at the histograms very  
12 fast if people want to see histograms for the most recent years.  
13 I didn't run it, but I can run it very quickly.  
14  
15 This is going to run through a series of them, similar to the  
16 histograms that Daniel just presented, but this is also cut off  
17 just above 90. I can do the whole thing too, but it gives you a  
18 little bit of an idea.  
19  
20 For divers, we do have a couple at 315 in this case. Pots and  
21 traps from Puerto Rico, there's a number of individuals at 187  
22 and two-hundred-and -- These bins are about twenty or thirty  
23 millimeters and so ten or twelve up in this range and then a few  
24 up in the 315 range.  
25  
26 St. Croix, this is divers and it does stop. Individuals are no  
27 larger than 164, but also the sample numbers are much lower than  
28 in Puerto Rico. St. Croix pots and traps, also the largest  
29 individuals at 160 or 170. St. Thomas/St. John, it's the same  
30 thing and that's all we've got there.  
31  
32 The information that we do have available is relatively  
33 consistent with what people have suggested for size changes over  
34 time. We do have some larger individuals showing up in Puerto  
35 Rico and so if anyone wants to look at this in a slightly  
36 different way or I can do it raw, without a minimum size cutoff,  
37 but that may confound any changes in selectivity or retention  
38 over time.  
39  
40 **BARBARA KOJIS:** Those graphs there, are those just for all the  
41 data, using all the data?  
42  
43 **TODD GEDAMKE:** This actually is cut off with an LC of 90 and I  
44 can --  
45  
46 **BARBARA KOJIS:** But it's for all the years and it's not --  
47  
48 **TODD GEDAMKE:** I cut it off -- I started at 2007, to spare us



1 looking through 127 histograms from all the different years.  
2 This is just the three most recent years, but if we want to look  
3 at individual years, we can, but I think the fundamental point  
4 here brings us back to there's nothing that we're seeing that  
5 really changes our earlier conclusion that the size of the  
6 individuals has not drastically changed over time.

7  
8 I think that it just brings us back to the question that  
9 although they may be sustainable at this size, the size  
10 composition may not be changing.

11  
12 I think Mike brought it up before and although they may be  
13 sustainable and although the size structure may not have  
14 changed, the question there is, is it sustainable at a level  
15 that is already overfished or is it sustainable at a level that  
16 is very, very far from that overfishing level?

17  
18 The question really is how far are we from that or where are we  
19 in relation to it? I don't think we have the information  
20 available really to quantify that right now.

21  
22 **BARBARA KOJIS:** Graciela, could you put up on there the  
23 information from the St. Thomas Fishermen's Association?  
24 There's a graph that they provided in their letter to the  
25 Secretary of Commerce.

26  
27 **GRACIELA GARCIA-MOLINER:** Do you want the whole letter or just  
28 the spiny lobster information?

29  
30 **BARBARA KOJIS:** I believe everybody received the letter before  
31 and does anybody have any preference on this? The contention  
32 was that there has not been a change in carapace length I  
33 believe between 1971 and 2006, which is the data that they  
34 provided. This is the table or the graph that they provided to  
35 support their contention.

36  
37 This is what they said and so I guess since landings have been  
38 increasing, the use of an average in this fishery results in the  
39 loss of 20,000 pounds before any ACL reduction is considered and  
40 so they're contending that we're using an average for the  
41 fishery based on the years 2000 to 2009 and that this is going  
42 to, without even an ACL reduction, cause a loss in the fishery  
43 of 20,000 pounds for the fishermen.

44  
45 Maybe you should start in the beginning. Early in the life of  
46 this, the CFMC instituted a requirement that spiny lobsters not  
47 be harvested until their carapace length was 3.5 inches or  
48 greater. This corresponds to a maximum yield per recruit and so

1 that's one of their contentions.

2

3 **MIKE SISSENWINE:** Maximum yield per recruit is a function of  
4 both size and fishing mortality and since fishing mortality  
5 isn't addressed in this, that conclusion can't be justified. It  
6 may be true, but there's no -- You can't come to such a  
7 conclusion from only half of the equation.

8

9 **BILL ARNOLD:** Just one thing I saw from that was it does look  
10 like there's not nearly as many large lobster in that more  
11 recent data. I don't know how significant that would be, but I  
12 think that should be pointed out.

13

14 **TODD GEDAMKE:** Bill, that's what I think. My interpretation is  
15 exactly the same and that's why I think you're just seeing a  
16 slight change in the St. Thomas plots for a slight reduction  
17 over time and it's those larger individuals, those few larger  
18 individuals in there.

19

20 **BARBARA KOJIS:** The St. Thomas lobster landings have risen from  
21 7,000 pounds in the 1970s to 135,000 pounds in 2006. Despite  
22 this nearly twentyfold increase in landings, the size frequency  
23 distribution in 2006 was nearly identical to the results of a  
24 fishery-independent study carried out in 1971.

25

26 This would not have happened if the size limit protections were  
27 not sufficient for management of the resource. Since landings  
28 have been increasing, the use of an average in this fishery  
29 results in a loss of 20,000 pounds before any ACL reduction is  
30 considered and this is based on the catch of 2006.

31

32 The imposition of an ACL based on an average, when the fishery  
33 has been undergoing four decades of consistent growth, will  
34 again create a situation of constant overfishing when none  
35 exists.

36

37 Again, this will lead to opposition rather than collaboration in  
38 the management of the St. Thomas/St. John fish resources, which  
39 is in no one's interest. This is the graph to support the fact  
40 that --

41

42 **BILL ARNOLD:** I'm assuming that there wasn't a minimum size  
43 limit back in 1974 or this was fishery independent? Still,  
44 they're taking an average that has a much wider range of  
45 representation for 1971 than 2006.

46

47 It seems to me if you cut out all those smaller lobster that  
48 wouldn't be allowed in the 2006 data, you might come to

1 different conclusions and I think that's something that we  
2 should at least keep in mind.

3  
4 **BARBARA KOJIS:** It would certainly change the way the 1971 data  
5 was distributed as well, because if you eliminated the smaller  
6 sizes, then each of those bars in the larger sizes would become  
7 larger as well and so it would look even more different,  
8 especially at the larger size groups.

9  
10 **MIKE SISSENWINE:** As I think Todd and others have already  
11 pointed out, it does appear to me that the rate of decline with  
12 length is greater in 2006 than in 1971, which would indicate a  
13 higher total mortality rate.

14  
15 The contention that the twentyfold increase in catch hasn't  
16 resulted in any impact in terms of mortality isn't supported by  
17 that data. That's just a very superficial look at it, but it  
18 certainly isn't obvious or one can't use this to say that there  
19 hasn't been any change. There appears that there has been a  
20 change.

21  
22 **BARBARA KOJIS:** Is there any other data that anybody wants to  
23 present? Does anybody have any information to discuss on  
24 spawning or spawning potential ratio or any of that information  
25 for lobsters, lobster in the Caribbean in particular?

26  
27 We were requested to revisit spiny lobster recommendations for  
28 OFL and ABC based on any updated information and since I would -  
29 - I would I guess like to have somebody make a motion or what  
30 have you regarding what the recommendation is of the SSC  
31 regarding spiny lobster.

32  
33 **VANCE VICENTE:** Just two items. Number one, we were comparing  
34 size frequency differences as a function of time or other  
35 parameters and there's some very simple tests that must be  
36 performed. Like, for example, the Kolmogorov-Smirnov test, KS  
37 test, is a simple, non-parametric test that can tell you  
38 immediately whether, for example, this 1971 to 2006 difference  
39 is real or not. Being part of a Scientific and Statistical  
40 Committee, we should be looking at this more scientifically and  
41 that's one thing.

42  
43 Another thing is that we have not, or at least I have not, heard  
44 anything regarding the spawning potential ratio of the spiny  
45 lobster and does anybody have any information regarding whether  
46 the SPR is above 20 percent or under 20 percent?

47  
48 That's a criteria that was used early on by Jim Bohnsack in one

1 of the references that you sent us, the Stock Assessment of  
2 Spiny Lobster in the U.S. Caribbean in 1990. I haven't heard  
3 anything on that and do we have that kind of information?  
4

5 **BARBARA KOJIS:** Can anybody respond to that question about  
6 spawning potential ratio or any information, I guess, about  
7 reproduction and where we stand, given the just even size and --  
8

9 **VANCE VICENTE:** Or age at maturity.

10  
11 **BARBARA KOJIS:** Age at maturity and all that for Caribbean  
12 lobster.  
13

14 **BILL ARNOLD:** There's information in that SEDAR report. Todd,  
15 is that what you have?  
16

17 **TODD GEDAMKE:** I have the SEDAR report in front of me, plus I'm  
18 also looking at the report I guess Vance had from Jim Bohnsack.  
19

20 **BARBARA KOJIS:** James Bohnsack in 1990.  
21

22 **TODD GEDAMKE:** The 1990 report, but I'll look through that SEDAR  
23 report right now.  
24

25 **VANCE VICENTE:** I think it's relevant, because in that paper,  
26 one of the issues is what criteria are to be used to determine  
27 whether the spiny lobster is overfished or not and it was  
28 presented to the council, the possible definition.  
29

30 The spiny lobster stock, as I read page 21 of the Bohnsack 1990  
31 report, a spiny lobster stock is considered overfished when any  
32 of the following are observed: 1)the spawning potential ratio is  
33 less than 20 percent; 2)when total landings have declined to a  
34 level below 75 percent of the five-year running mean or when  
35 total landings have declined for three consecutive years and so  
36 on. I haven't seen any follow-up on these early suggestions  
37 regarding criteria to determine whether a stock is overfished or  
38 not.  
39

40 **WALTER KEITHLY:** Just to try to move the discussion along,  
41 especially since it's about twenty-five degrees in this room, I  
42 think the issue that we're facing is have we been provided with  
43 any evidence, or any significant amount of evidence, that would  
44 suggest we should reverse the motion that was made at the  
45 previous SSC meeting on our recommendations.  
46

47 As of yet, I've seen absolutely no evidence that would suggest  
48 we should reverse our recommendations, as much as the fishing

1 community may wish us to and it sounds like the agency itself  
2 would -- Well, I'll leave it there, but I just have not seen the  
3 evidence that would suggest we should change our recommendation.  
4

5 Given the situation that it is the SSC that makes these  
6 recommendations, by law I think the evidence has to be  
7 overwhelming at this stage, or at least very strong, for us to  
8 make any change in recommendations and I have not seen that.  
9

10 **MIGUEL DEL POZO:** Can you please repeat what the recommendation  
11 was? I'm not certain about what --  
12

13 **BARBARA KOJIS:** Bill, do you have that information?  
14

15 **BILL ARNOLD:** The council's recommendation was to reduce from  
16 the average catch to arrive at an ACL and that reduction was 10  
17 percent and so I think, and I'm trying to find the table right  
18 now, but I think that the average over that time period was  
19 roughly 115,000 pounds or something and the reduction would have  
20 been about 15,000, taking them down somewhere around 100,000.  
21

22 They are talking about 20,000 pounds and I'm not sure where they  
23 got that, but let me find these numbers and make sure I've got  
24 the right ones.  
25

26 **BARBARA KOJIS:** While he's checking that, the average catch was  
27 used for St. Thomas/St. John and St. Croix. Median was used for  
28 Puerto Rico and so what he was just talking about in terms of  
29 values was just for St. Thomas/St. John, because that was what  
30 was up there.  
31

32 Puerto Rico's median is higher than that, but if you've got one  
33 of those graphs from the amendment, that may help explain where  
34 we stand and what the issues are. I think it's on page 77 or  
35 page 78 of the amendment, something like that, that you've got  
36 the lobster graph there.  
37

38 **MIKE SISSEWINE:** Our recommendation was basically that the ABC  
39 was equal to the recent average catch and I think average was  
40 over five years and so that's what our recommendation is. This  
41 10 percent factor is the council's decision.  
42

43 **BARBARA KOJIS:** Our recommendation was for Puerto Rico it was  
44 the median from 1988 to 2009 and whatever the data was, it was a  
45 longer period of time. Then because of the fact that St.  
46 Thomas/St. John and St. Croix they didn't actually -- Although  
47 with lobster they did, but with the other species, they didn't  
48 break down by family group or anything fish species until about

1 1999, I think in the case of St. Croix, and 2000 in the case of  
2 St. Thomas.

3  
4 Then we just used that period of data for them for an average  
5 and we did median for Puerto Rico after initially doing average.  
6 We went back and reviewed it at the request of the council and  
7 came up with the median as being a more accurate estimation and  
8 took care of omitting those outliers, like the 2008 outlier.

9  
10 With the 2008 outlier, I wonder if there may have been something  
11 with the abundance, but were fishermen fishing any other  
12 habitats? Did they find a new habitat to fish in, like an area  
13 that was a little bit deeper or something like that that they  
14 found a lot of lobster in that hadn't been harvested previously?  
15 Is there any indication of that, that they were fishing new  
16 fishing grounds?

17  
18 **DANIEL MATOS:** Sometimes that occurs. For example, two weeks  
19 ago, we had this weather condition, a cold front from the north,  
20 and so some fishers from Puerto Real moved to the south, where  
21 the water was more easy to fish and they found a nice area they  
22 are not able to fish during the whole year and because this day  
23 the conditions were good in the south.

24  
25 Two weeks ago, because of the weather conditions, it was good in  
26 one area close to the Cabo Rojo lighthouse and the fishers were  
27 able to catch 200 pounds at twenty feet of depth very close to  
28 that area and so that occurs. Sometimes they are able to find  
29 new fishing grounds.

30  
31 Also, the year 2008 was the year, as I mentioned previously,  
32 where the abundance was really huge and we had this marketing  
33 situation and so abundance was big this year, too.

34  
35 **VANCE VICENTE:** I think we talked about this the last time and I  
36 remember that I mentioned these mass migration events of the  
37 spiny lobster, the fact that they --

38  
39 I think it was back in 1976 when the fishermen of Luquillo -- I  
40 had my office right next to you guys and they were picking them  
41 up with nets, thousands of pounds, and they overloaded all the  
42 freezers throughout the whole area and despite that, the price  
43 stayed the same, by the way, but they sometimes hit these  
44 migrations, these massive migrations, which I think it's an  
45 annual event or it's something quite predictable.

46  
47 In fact, there's so many that they climb on top of the shoulders  
48 and they form these mass columns and they just migrate and

1 occasionally, when fishermen spot them, the word spreads around  
2 and they go and they take literally thousands of pounds in a day  
3 and so that could have happened in 2005.

4  
5 **BARBARA KOJIS:** The slightly lower catches subsequently could be  
6 a function of the fact that they harvested heavily in 2008,  
7 because it looked like there was a decline after that in the  
8 catch levels compared to previous years, but that was difficult  
9 to say, because it was a different factor that you were using to  
10 calculate expanded landings.

11  
12 **DANIEL MATOS:** We have some years with very good landings,  
13 better than others, but I didn't see a trend of decreasing in  
14 the catch of lobsters for the last years. It's very similar.

15  
16 **MIKE SISSEWINE:** Can I attempt a summary of what I think we've  
17 reviewed and where we are on this, given that I've just  
18 scribbled notes?

19  
20 **BARBARA KOJIS:** Do we want to have Todd give information about  
21 the spawning potential? We were going to look that up first and  
22 then we can do a summary. Are you ready to do that, Todd?

23  
24 **TODD GEDAMKE:** I do not have the calculations and I'm not going  
25 to do them on the spot right here, but Vance pointed me to the  
26 SPR calculations that were done in the 2005 assessment and those  
27 are not related to any of the effort metrics and so they don't  
28 touch on some of the concerns we had with the way the catch per  
29 unit effort was calculated.

30  
31 I will just read -- This is on page 22 of the 2005 report and  
32 Vance summarized what was suggested as an SPR F20 of a limit and  
33 it says here the static SPR associated with 85 and 86 through  
34 2000 and the average fishing mortality rate was 19 percent,  
35 which is similar to the existing 20 percent. Fishing  
36 mortalities were higher than the F20 cutoff of 0.49 per year ten  
37 times over the past nineteen fishing years.

38  
39 Mike also pointed out that this does get into fishing mortality  
40 calculations, which we don't really have. I don't think this  
41 adds a whole lot to our discussion right now, I really don't.

42  
43 **BARBARA KOJIS:** Okay. Mike, do you have a summary that you want  
44 to present?

45  
46 **MIKE SISSEWINE:** Yes, but just getting back to that, that would  
47 indicate that based on the 2005 assessment that the stock was at  
48 or even slightly overfished, at the overfishing threshold or

1 even slightly overfished.

2  
3 With the 20 percent SPR criteria, which in 2005 the various  
4 basis for defining overfishing under the law were different, and  
5 we had a revision of the Act and so forth, and that 20 percent  
6 SPR, in general, would be considered to be too low or too high a  
7 fishing mortality to achieve MSY.

8  
9 That particular conclusion was that we were at or even slightly  
10 overfished, based on an overfishing criteria that probably  
11 wouldn't be acceptable if one required that we were achieving  
12 MSY. Generally the sort of rule of thumb for a spawning biomass  
13 per recruit that's associated with MSY is 30 percent or higher.

14  
15 If anything, it would argue against the conclusion that the  
16 stock is not suffering from overfishing, but I would agree with  
17 Todd at this point that we just leave that aside, since it  
18 probably doesn't add to our conclusion.

19  
20 My interpretation of what we've done for the last several hours  
21 on this is that, again, we're responding to a request to review  
22 our OFL and ABC recommendations from the previous meeting or two  
23 and in doing so, we considered the SEDAR 2005, which had  
24 concluded that overfishing was not occurring.

25  
26 We noted that there had been some issues raised by the Southeast  
27 Fisheries Science Center about the interpretation of the effort  
28 data that might throw those conclusions into question and we  
29 looked at length frequencies, which showed a rather rapid  
30 decline in size, perhaps more rapid than we would expect if  
31 overfishing were not occurring. I word it as "perhaps" because  
32 it was a very superficial conclusion.

33  
34 We also looked at data from the St. Thomas Fishermen's  
35 Association, which compared I think it was 1971 to 2006 length  
36 frequencies, and, again, superficially, they appeared to show  
37 some change indicative of an increase in Z, in total mortality,  
38 and presumably fishing mortality, but again, that's a very  
39 superficial review.

40  
41 Given all of that, the SSC has no formal basis to reject its  
42 previous conclusion that overfishing is not occurring. However,  
43 we have no basis whatsoever to quantify how much the fishery  
44 might expand without causing overfishing.

45  
46 Actually, everything we saw might have hinted at the other  
47 direction, but we certainly didn't see anything that said you  
48 could expand the fishery without causing overfishing and thus,



1 we don't have any basis other than to use the average catch  
2 method for determining OFL and ABC, as we did in our previous  
3 advice.

4  
5 I think we should add that we understand that the average catch  
6 method for ABC and reductions to it to set ACL will mean that  
7 catches that would have been allowed previously, during a period  
8 when we're presuming that no overfishing occurred, will now not  
9 be allowed or will result in accountability measures.

10  
11 This situation, in my opinion, is an unfortunate artifact of the  
12 ACL-based management and a data-poor situation. It isn't  
13 because there's anything wrong with the scientific basis of our  
14 conclusions, but it's an artifact of the system that's in place  
15 and it goes back to the fact that there may have been past  
16 years, when overfishing wasn't occurring, where the catch was  
17 higher than the average. Obviously there were, because that's  
18 the nature of averaging.

19  
20 Going forward, because we don't have data under which we can  
21 look at fishing mortality on a year-to-year basis, we're forced  
22 to use these average catches. The ACL process, and the "A"  
23 stands for annual, interprets conclusions about overfishing and  
24 responses to it on an annual basis and that inherently requires  
25 more data than was required when we came to the conclusion that  
26 over some long period of time, on average, there wasn't  
27 overfishing occurring.

28  
29 It creates this problem of making situations that were  
30 acceptable in the past unacceptable going forward. It's not a  
31 science problem and it's an artifact of the framework being used  
32 to manage. I don't see any basis that we have to change  
33 anything we've done.

34  
35 **BILL ARNOLD:** I certainly don't disagree with Mike and I think  
36 he summed it up very nicely and I think that summary pretty much  
37 brings together the three key aspects of this SSC meeting, the  
38 first one being Mara's discussion this morning, which dealt with  
39 OFL versus ABC, when you get right down to it.

40  
41 The fact is we had to -- We didn't have to, but we were  
42 certainly -- It was effective to reduce the ACL below the ABC so  
43 that we wouldn't constantly be overrunning not the ABC, but the  
44 OFL.

45  
46 Had the SSC set an ABC rather than an OFL, then the council  
47 would have had the freedom to set the OFL higher and we could  
48 have allowed the fisheries to continue operating at average

1 catch instead of reducing them and that may not be not  
2 semantically perfectly phrased, but I think the general idea is  
3 laid out there.

4  
5 That sort of brings up how we got in the position of reducing  
6 sustainable yield, effectively, in spite of its sustainability,  
7 simply because we have to create a situation where we avoid  
8 exceeding the OFL.

9  
10 Then the third component of this meeting, and what Mike kind of  
11 addressed at the end of his comments, is the ERAEF risk  
12 assessment discussion that we're going to have at some point and  
13 my contention being that rather than just addressing the risk  
14 assessment of that data-poor workshop that we had last February,  
15 I think it would be very valuable to address as well the  
16 Babcock/Wilson/Jeremy Prince approaches to looking at how the  
17 ACLs are performing and how we can compare ACLs in a fished  
18 environment versus ACLs in a non-fished environment, which would  
19 be of substantial benefit to me as a manager going forward, as  
20 Mike pointed out, on doing some annual or very short-term  
21 reconsideration of the ACLs to determine is there room to  
22 increase the ACL or is there a need to reduce the ACL and what  
23 kind of timeframe are we going to apply to address that and how  
24 do we manage these ACLs going forward, which is going to be, in  
25 my opinion, far more difficult than the process of originally  
26 establishing the ACLs.

27  
28 **BARBARA KOJIS:** Thanks very much, Bill. One of the other things  
29 we didn't consider and we probably need to discuss in there is  
30 that there are some fairly substantial closed areas within both  
31 Puerto Rico and the U.S. Virgin Islands.

32  
33 Those areas are substantial areas that prohibit all fishing,  
34 whether it's for lobster or what have you. How do we take that  
35 into account with respect to this? At this stage, it doesn't  
36 comprise like 25 percent and it probably comprises something  
37 like 12 or 14 percent in St. Thomas and maybe 10 to 11 or maybe  
38 a similar percentage in St. Croix and I don't know with Puerto  
39 Rico.

40  
41 That also probably needs to be included in any assessments,  
42 whether it's our assessment of the status of the lobster or  
43 future assessments of lobster status by the Southeast Fisheries  
44 Science Center or local agencies.

45  
46 I don't know if anybody wants to comment on that aspect of the  
47 status of lobster, because I don't know that we've included any  
48 of that in any of the publications. Probably back in 2005 when

1 the SEDAR was there, some of these were fairly new and were just  
2 being implemented, even if like the Monuments had been created  
3 in 2001, the actual enforcement of the Monuments didn't probably  
4 start until say 2004, when people were asked to remove their  
5 traps and stuff from the Monument areas after they had a plan in  
6 place.

7  
8 I would be just curious as to how that's going to be  
9 incorporated in the future into assessments of status of fish  
10 and lobster.

11  
12 **MIKE SISSENWINE:** I have a comment. We based our recommendation  
13 on average catches, which is an output of the fishery. All of  
14 the input controls that are in the fishery, which are minimum  
15 size and closed areas and so on, are all reflected in those  
16 outputs of catch and so in that sense, they're taken account of  
17 in the way we've estimated ABC.

18  
19 In terms of whether the Monuments or closed areas would have  
20 changed the exploitation such that overfishing were no longer  
21 occurring, that's not a question, because we haven't ever come  
22 to the conclusion that there was overfishing.

23  
24 As to being able to quantify how much effect that might have  
25 made such that the fishery could expand as a result to mitigate  
26 the loss in fishing because of the closed areas, I don't know  
27 how one would quantify that, but we did look at the length  
28 frequencies post -- You said the effect might have occurred in  
29 2004.

30  
31 Since 2004, we didn't see any dramatic increase in the number of  
32 large lobsters since 2004 and so the only scientific data we  
33 have that might reflect on a change in mortality rate that could  
34 have occurred because of closed areas doesn't indicate a change  
35 that's measurable. It's very blunt data, but it's not  
36 measurable.

37  
38 That data should have accounted for it, to the extent that it  
39 was a significant change. I think indirectly we've already  
40 looked at the data that would reflect any impact of closed areas  
41 and that's already embedded in our conclusions.

42  
43 I do think that we can go around and around on this, but I think  
44 we ought to just -- I don't know whether it needs to be in a  
45 motion, but we ought to either agree or disagree on the bottom-  
46 line conclusion that we have no basis to alter our previous  
47 advice and I've laid out a rationale of five or six points that  
48 would be behind that, but I think the bottom line is that, that

1 we have no basis to alter our previous advice.

2  
3 **JORGE GARCIA:** Barbara, I want to be clear, but why are we being  
4 asked to revisit our position?

5  
6 **BARBARA KOJIS:** We are being asked to revisit the position  
7 because the Caribbean Fisheries Management Council felt that  
8 because of the management measures in place, as well as  
9 information from the stakeholders that the fishery was healthy  
10 meant that average or median catch rates would not -- Basing the  
11 OFL on average or median catch rates was not -- The OFL could  
12 have been higher than that, because of the fact that the fishery  
13 was healthy.

14  
15 Since the fishery was healthy, in their mind, and the  
16 regulations in place were allowing the fishery to maintain its  
17 healthy status, that the OFL could have been above median or  
18 average catch. This was an opinion, more or less, of the CFMC,  
19 based on the regulations and based on the stakeholder input.

20  
21 Graciela and Bill, am I correctly expressing that? Was there  
22 any other rationale that was provided at the Caribbean Fisheries  
23 Management Council meeting for increasing OFL and requesting the  
24 SSC to increase OFL?

25  
26 **GRACIELA GARCIA-MOLINER:** I do have the verbatim transcription  
27 of the 140<sup>th</sup> CFMC Meeting here and so if you want me to put it up  
28 on the screen.

29  
30 **BARBARA KOJIS:** Sure. Maybe I should read it out loud so it's  
31 on the record. This is Roy Crabtree's comments: "We had a lot  
32 of discussion yesterday about overfishing levels and the SSC  
33 recommendations and a lot of dissatisfaction, particularly with  
34 spiny lobster, about what may or may not have been taken into  
35 account.

36  
37 I guess my question is when does the SSC meet again and do we  
38 want to ask the SSC to relook at some of these again,  
39 particularly spiny lobster? The kinds of concerns I have is  
40 that I deal pretty closely with three different SSCs and they  
41 seem to be treating these things differently and that's  
42 worrisome to me.

43  
44 What I sent down to Barbara and they looked at that involved the  
45 standard deviation things was a control rule developed by the  
46 Gulf Council SSC, but the SSC down here had issues with that,  
47 meaning our SSC. Then in the South Atlantic Council's SSC, they  
48 went through a similar process, I think, to what the SSC used

1 down here, but they determined that -- I'm reading from the  
2 South Atlantic Council's SSC report here.

3  
4 They say there was general consensus among SSC members that  
5 landings streams during a period when a stock is considered  
6 stable represent ABC, acceptable biological catch, and not OFL.  
7 In this scenario, OFL is an unknown value above the ABC that  
8 cannot be provided to the council.

9  
10 Where they came at is they gave the council ABCs, fishing  
11 levels, but they said the overfishing level is unknown and I  
12 think there's a lot of sense to that and the South Atlantic  
13 Council proceeded to set ACL equal to ABC, because they didn't  
14 have an OFL.

15  
16 Then our SSC has come in and essentially looked at landing  
17 streams and given us levels, but they've said these are OFLs and  
18 so what's missing from all of this is an explanation for why are  
19 these groups of scientists coming to different decisions between  
20 these things.

21  
22 I think, Todd, that the Science Center needs to get more engaged  
23 with the SSCs, because I see a responsibility of the Southeast  
24 Fisheries Science Center to ensure that we're getting consistent  
25 and defensible scientific advice in the southeast region and I  
26 think right now we're getting some inconsistent advice and I  
27 think the Center really needs to focus on and address this.

28  
29 One of the things I would like to see happen, and I'm not  
30 criticizing any of these SSCs and I'm not really making a  
31 judgment about which SSC may be right or not, but there are lots  
32 of different ways to look at it, it seems to me then it becomes  
33 not a science call really, but more of a policy call and the  
34 council ought to play a more direct role in making policy calls,  
35 rather than the SSC.

36  
37 I think that's part of what's going on here, is confusion on it,  
38 but it seems to me science, if it's really science-based, ought  
39 to be consistent and not different like this and so I think we  
40 need to have, between now and the December council meeting, if  
41 we can, have an SSC meeting.

42  
43 I think we ought to ask the Southeast Fisheries Science Center  
44 to come in and go over with them more carefully the different  
45 control rules that have been developed by our three SSCs in the  
46 southeast and to emphasize some of the differences, particularly  
47 this OFL or ABC, and see if we can't bring some more consistency  
48 into it, because it really bothers me when I see things handled

1 differently.

2  
3 Councils can make regionally different decisions. You guys can  
4 decide how conservative you want to be and things and you can  
5 reach a different decision than what happens in the South  
6 Atlantic Council. That's why we have regional fishery  
7 management councils, but it doesn't seem to me that science  
8 ought to vary so much from region to region. It's just not the  
9 nature of science.

10  
11 I think we've, in some cases, got a muddle of policy and science  
12 and some things going on here that we need to sort out and  
13 clearly it has some important implications in terms of where  
14 we're setting these ACLs and so I would like to see if we could  
15 do that, Miguel, that we have the SSC meet again and that, Todd,  
16 that the Center really focus in on this and bring in a broader  
17 context to all of this and seeing if we can make some progress  
18 and have a report back to us at the December council meeting."

19  
20 **MIKE SISSEWINE:** I actually agree with most of what Roy is  
21 saying, that there is an inconsistency between the way the three  
22 SSCs have handled this and that a lot of these issues are mixing  
23 policy and science and so I can fully appreciate his frustration  
24 and all three of the councils', I guess, frustration.

25  
26 This ought to be resolved, but we can't resolve it in a single  
27 meeting of this SSC. We used a methodology that's basically  
28 come forward from a number of sources for data-poor stocks that  
29 using recent average catch is a basis for OFL and ABC  
30 determinations.

31  
32 I can tell you in the Northeast, in the New England Fishery  
33 Management Council, they would use recent average catch or they  
34 do use it to estimate OFL and in many cases, say we can't  
35 estimate ABC and here, we're talking about use it for ABC and  
36 say you can't estimate OFL and so these inconsistencies are even  
37 broader than the Southeast.

38  
39 There are meetings of the councils and there are meetings that  
40 have been held, national meetings, to review the science behind  
41 National Standard 1 and these things have been occurring that  
42 the agency has been holding, but my blunt assessment of them is  
43 that they're ineffective because basically everybody does their  
44 show-and-tell and nobody actually forces them to identify key  
45 issues that need to be resolved and enforced consistently across  
46 the country.

47  
48 Roy is right on in terms of his frustration, but we can't solve

1 his problem sitting here in this meeting with the material we've  
2 been presented. We had General Counsel giving us some views  
3 from a legal point of view, but they were hardly definitive in  
4 what we should do.

5  
6 I'm not sure how we're supposed to react to that, other than  
7 what we did is -- It just is another element of the uncertainty  
8 in the total complex science policy arena.

9  
10 **JORGE GARCIA:** A quick comment on this and I think that I agree  
11 with the last sentence about the uncertainties. When you  
12 consider that we are applying a 50 percent expansion factor to  
13 this data, to me that's outrageous. For me, it's such a big  
14 number to start with and it's a number that we don't really have  
15 a good handle on.

16  
17 We are applying that because that's what we think it is and  
18 we're using proxies for MSY because we don't have anything else  
19 and all the uncertainties about these ambiguities and  
20 inconsistencies in the reporting by the fishermen and all this  
21 makes the data so questionable.

22  
23 The uncertainties around these values are so huge that for me  
24 the difference between acceptable biological catch and the  
25 overfishing limit is small compared to all the uncertainties  
26 that we have in this dataset.

27  
28 I find the comment almost -- I don't see much sense in it,  
29 frankly. I am trying to come up with what is it that we need to  
30 fine tune our recommendation when the uncertainty on the entire  
31 analysis is much bigger than that and I can't even come to any  
32 way of looking at it, frankly, when I see all of the uncertainty  
33 that is embedded in these datasets.

34  
35 **MIGUEL DEL POZO:** I want to add to that as well that also we  
36 don't have any data nor any ACLs for recreational fishermen on  
37 the lobster issue and we're talking probably about, in the  
38 Puerto Rican case, 700 or 800 fishers and recreational fishers,  
39 we're talking about 300,000, more or less.

40  
41 I'm not saying that they are targeting lobster, but I'm just  
42 saying that we're losing a big chunk of the whole picture and I  
43 agree that we just -- The uncertainty, it seems to me huge, to a  
44 degree where probably we don't have an idea of the universe  
45 we're dealing with.

46  
47 **TODD GEDAMKE:** I guess my comment is a little staggered. I just  
48 wanted to follow up on Mike's comment and I also agree with

1 Roy's frustration on this and Mike clicked off a number of  
2 points that I wanted to make, but Roy is dealing with three  
3 different SSCs and he is directly involved with the differences  
4 in the control rules that are being used in the three different  
5 regions.

6  
7 I've been involved in a number of the national meetings that  
8 Mike alluded to also and this is not just an issue between these  
9 three SSCs.

10  
11 This is an issue, as Mike touched on, that goes across the  
12 country and there is a mix of policy and science involved and I  
13 just wanted to agree that we're not going to solve this here  
14 with the information that we have and I think this needs to  
15 really be addressed nationally and with more clear direction for  
16 each of the regional SSCs.

17  
18 This is not a problem that we're just facing in this region, but  
19 it's an issue and questions that are being raised across the  
20 country right now.

21  
22 **BILL ARNOLD:** Just a question for you guys. Since it's more of  
23 a policy call than a data call, this would be not really in the  
24 domain of the national SSC group, right? Who would address  
25 this? Is this something that needs to be addressed at the NMFS  
26 Headquarters level or via Congress or what?

27  
28 **MIKE SISSENWINE:** I'm not sure whether it should be addressed by  
29 the national SSC group, but it would seem that the Center  
30 science side is the keepers of the National Standard 1  
31 Guidelines, the architects.

32  
33 Basically, the discussion of this is heavily -- The focus of  
34 these SSC meetings is heavily related, SSC meetings and the  
35 other national meeting that was convened some couple of months  
36 ago, the focus is on these National Standard 1 Guidelines.

37  
38 All of this complexity in the system and mix of policy and  
39 science is inherent in those National Standard 1 Guidelines.  
40 They mix them and so it's not necessarily uniquely the  
41 responsibility, but it's clearly -- Those National Standard 1  
42 Guidelines are a major topic for all of these meetings.

43  
44 The various efforts that the SSCs have made in working groups on  
45 data-poor situations and all are all geared to figuring out how  
46 to apply the National Standard 1 Guidelines. It's the National  
47 Standard 1 Guidelines that tie ABCs to OFLs. It's the National  
48 Standard 1 Guidelines that say you can't have OFLs, ABCs, and



1 ACLs all equal, except in some strange circumstances which the  
2 Secretary is certain to question. That's what they say.

3  
4 I think that many of these are policy problems that ought to be  
5 handled somewhere else, but they've made into basically the  
6 dialogue of the science community, which, again, I personally  
7 think is a mistake, because it has gotten so confused, but  
8 that's where the agency has put it and not the SSCs.

9  
10 **BARBARA KOJIS:** Any other comments? Maybe what we can do is we  
11 can take lunch right now and then we can come back and finalize  
12 the comments and so on about this. Why don't we come back from  
13 lunch at 1:30 and then we'll finish the discussion on this?  
14 Thank you.

15  
16 (Whereupon, the meeting recessed for lunch on November 15,  
17 2011.)

18  
19 - - -

20  
21 November 15, 2011

22  
23 TUESDAY AFTERNOON SESSION

24  
25 - - -

26  
27 The Scientific and Statistical Committee of the Caribbean  
28 Fishery Management Council reconvened at the Embassy Suites  
29 Hotel, San Juan, Puerto Rico, Tuesday afternoon, November 15,  
30 2011, and was called to order at 1:30 o'clock p.m. by Chairman  
31 Barbara Kojis.

32  
33 **BARBARA KOJIS:** It looks like we have everybody here and let's  
34 reconvene the meeting. Let's first finalize what we were  
35 discussing previously and I think Mike Sissenwine will just --  
36 If he can just really briefly summarize that, so we can just get  
37 a consensus on this issue regarding the lobster.

38  
39 **MIKE SISSEWINE:** Just very briefly, in response to the request  
40 to reconsider our recommendations on lobster, we briefly took  
41 note of the SEDAR 2005 and subsequent questions about some of  
42 the conclusions there, length frequency data, and a presentation  
43 of information presented by the St. Thomas Fishermen's  
44 Association.

45  
46 In light of this, we have no reason to alter our previous  
47 acceptance that spiny lobsters are not undergoing overfishing.  
48 However, we also have no basis for judging whether there's any

1 room for a significant increase in fishing pressure and  
2 therefore, we have no basis other than to formulate our advice  
3 based on recent average catches, as we did in our previous  
4 recommendation, and therefore, we have no basis for altering  
5 from our previous recommendation.

6  
7 I think that summarizes our discussion and I would hope we could  
8 agree to that by consensus, that basically we have no basis to  
9 alter our previous recommendation.

10  
11 **BARBARA KOJIS:** Are there any other comments or what have you or  
12 does anybody disagree with that summarization? Then I will say  
13 that the consensus is that we will stay with the recommendations  
14 that we originally recommended.

15  
16 Mike Sissenwine is going to put together a summary of our  
17 decision, with the rationale behind it and so on, and we'll take  
18 a look at that tomorrow and more or less get a consensus on that  
19 as well and so that should kind of make sure that we've got the  
20 rationale available for the council.

21  
22 The next thing that I just want to do briefly, because Daniel  
23 will not be with us tomorrow and may not be able to stay the  
24 whole time either, but just to go over -- For him to go over  
25 what Puerto Rico is doing with respect to their trip ticket and  
26 where they stand with that, so we have that information  
27 available.

28  
29 That's not the next topic on the agenda, but because Daniel may  
30 not be able to be with us when we discuss that, I would like him  
31 to look at that now, so we've got the information. This is the  
32 revised trip ticket for Puerto Rico that you've been using for -  
33 -

34  
35 **DANIEL MATOS:** For a year, for the last year, yes.

36  
37 **BARBARA KOJIS:** If you can tell us about the revision and then  
38 also about how well it's going and how successful this is.

39  
40 **DISCUSSION OF REVISED PUERTO RICO TRIP TICKET**

41  
42 **DANIEL MATOS:** After many meetings, we finally had this trip  
43 ticket form and the fishers started to use it for the last  
44 fifteen months or maybe sixteen months. We started to use it  
45 last May, May of 2010. It's close to seventeen months.

46  
47 Here, they just have to check if their catch was during the  
48 daytime or the nighttime, the date, the month and day and year.

1 We have a unique trip number here and here, they also check if  
2 the trip ticket was filled by the fisher himself or by the fish  
3 house and then the municipality, the name of the municipality,  
4 the name of the fishing center.

5  
6 We have three fields for three fishers in the boat and three  
7 license numbers. Phone number and if we have any question to  
8 the fisher, we can call him and say we don't understand your  
9 name or something like that or what was your gear and so we have  
10 this phone number and it's good for the database, to contact  
11 fishers for meetings or for any questions.

12  
13 The depth, where he caught most of the fishes, and the boat  
14 registration number and here, you will see this part is not in  
15 use yet. We are very close to starting with that and it's very  
16 important.

17  
18 It's the place where they make the catch and so we are  
19 developing some maps, with the help of Nancy Cummings, and we  
20 will have some grid maps with I think it's one-square mile and  
21 the fishers can report four or five places, if they move around.  
22 If not, one or two places or even if it's only place, they are  
23 able to write here the number of this map and hopefully we will  
24 have that for the next year and so in 2012, we will use this  
25 part and we will be collecting data about the fishing areas.

26  
27 Here is some permits, the HMS or conch or lobster permit. This  
28 is from the Puerto Rico Department of Natural Resources and the  
29 HMS comes from the NOAA Fisheries. If they fish nine nautical  
30 miles or less or more, this is federal waters or local waters,  
31 the Commonwealth of Puerto Rico waters.

32  
33 Here, you will see the commercial fishers recommend to group the  
34 fish by fishery and so here you will see the pelagic fishes,  
35 tunas and dolphinfish and wahoo, are here and in this part, you  
36 will see the deepwater snappers and groupers and so if they do  
37 this deepwater snapper fishery, they have all the species  
38 together and here are the sharks and here are the reef fishes  
39 and we're going down a little.

40  
41 Here are the shellfish, the bait, and the reef fishes are in  
42 this column and so the fishers are happy and they are giving us  
43 information.

44  
45 However, we continue to receive some incomplete forms and we are  
46 in the process of mentioning the importance to fill every piece  
47 of data we are asking for and so we are getting good progress  
48 and hopefully starting next January we will receive everything

1 and if they don't write everything, then we will return the form  
2 to the fisher to be completed. Basically, that's it.  
3  
4 Well, I didn't mention the -- Just to show the -- I mentioned  
5 the species, but we also collect the weight by pounds, price per  
6 pound, the gear, number of hours fishing for every species and  
7 the size or the number of gear. For example, how many traps or  
8 how long was the net or how many hooks did they use? Basically,  
9 that's what we are doing. Any questions?  
10  
11 **MIGUEL DEL POZO:** I have a question. I'm seeing that there is a  
12 question there about if it was a charter trip. That's new as  
13 well.  
14  
15 **DANIEL MATOS:** This question here? That question will be  
16 deleted in the future and it was a recommendation to eliminate  
17 that, because asking the fisher how many days before your last  
18 trip and a port sampler took data from this trip and this  
19 question is inappropriate, too. That part will be eliminated  
20 from the new ones and it was a recommendation from some people  
21 that see this as irrelevant.  
22  
23 **BARBARA KOJIS:** Any other questions? That seems like a lot of  
24 information for fishermen to fill out.  
25  
26 **DANIEL MATOS:** It is.  
27  
28 **BARBARA KOJIS:** What has the response been of the fishermen and  
29 have you checked the accuracy of their information that they're  
30 filling out?  
31  
32 **DANIEL MATOS:** At the beginning, some of them said there's too  
33 much, but we are -- We are doing some approach to them and  
34 mentioning how important it is, some outreach and education, and  
35 we also have some new commercial fishers and probably right now  
36 a third of the trip tickets are filled completely and we have to  
37 work with the other two-thirds to do all the checkmarks and  
38 write the hours. The hours and fishing numbers, we need to push  
39 that, to have all this information, so in the future the  
40 decisions like we are doing today will be easier.  
41  
42 **VANCE VINCENTE:** Just a suggestion, something that came to my  
43 mind. If you are able to provide each of the fish houses with  
44 say two or three or maybe just one GPS and have some selected  
45 fishermen, those that fill out the forms and are very conscious,  
46 and just provide one per area for the fish house and then just  
47 mark the waypoints and to take the GPS and download it and  
48 you'll find out the location and from there, you will get the

1 depth, the distance from shore, and even with the biogeography,  
2 NOAA's biogeography map, type of habitat and everything and that  
3 will confirm what they wrote and it will be more reliable and  
4 not that expensive. It doesn't have to be a very expensive GPS.

5  
6 **DANIEL MATOS:** That's a very good idea and thank you. It's not  
7 expensive and we can find some fishers that would love to  
8 cooperate with us and so maybe we can find fifteen or twenty GPS  
9 and do something like that. Thank you and that's a very good  
10 suggestion and thank you.

11  
12 **MIGUEL DEL POZO:** I'm curious about the tunas. Are you  
13 identifying any issues with let's call it the false taxonomy?  
14 Do you think that the data regarding the tunas is reliable? For  
15 instance, the blackfin tuna, the common name is bonito and for  
16 some other parts of the island, bonito is false albacore or  
17 little tunny and then the skipjack tuna as well. I guess my  
18 question is if it's possible to deal with the variety of names  
19 and the false taxonomy in general.

20  
21 **DANIEL MATOS:** It's a good question and we use mostly the common  
22 names from the Puerto Rico west part, because they report  
23 probably 95 percent of the tuna and so we didn't receive a lot  
24 of reports from the east coast. However, we wrote the names in  
25 English and Spanish and so that maybe helps to the fishers who  
26 know the fishes, but, again, 95 percent, or maybe more, of the  
27 tuna information came the west.

28  
29 **BARBARA KOJIS:** Any questions for Daniel? Thank you very much  
30 and we'll be discussing this again, or at least things in  
31 relation to this, later on and so what I would like to do is go  
32 over and discuss the ERAEF and allow --

33  
34 **TODD GEDAMKE:** First, I got a response regarding the lobster  
35 documentation and I thought I would just read that into the  
36 record, just because I somewhat mis-described the summary on it,  
37 but the end conclusion of it is similar.

38  
39 The effort metric discussion, I was mixing and matching the  
40 lobster and the conch discussions. There was some question as  
41 to how the trips were calculated for the lobster conclusions,  
42 but in the end, I'll just read the summary and if for anyone  
43 that wants to find this, it's in the assessment workshop report  
44 and also the review panel comments.

45  
46 Although a number of scenarios were explored with different  
47 models, with two quite different models, no definitive  
48 conclusions could be reached about the status of U.S. Caribbean

1 spiny lobster. They describe the ASPIC non-equilibrium surplus  
2 production model and also some of the yield per recruit and SPR  
3 comments that we have already discussed.

4  
5 The final statement here is just given these wide disparities,  
6 the assessment workshop panel felt the assessment of the U.S.  
7 Caribbean spiny lobster is inconclusive and that it's not  
8 possible to determine its status at the present and so I just  
9 wanted to make sure that my comments were clarified and I have  
10 these available for anyone who would like to see them.

11  
12 **BARBARA KOJIS:** Thanks very much, Todd.

13  
14 **MIKE SISSENWINE:** That's a SEDAR report?

15  
16 **TODD GEDAMKE:** Yes.

17  
18 **MIKE SISSENWINE:** What year?

19  
20 **TODD GEDAMKE:** I believe it's the 2005, the reviewer's comments.  
21 It's the reviewer's comments as opposed to the report that was  
22 drafted from the assessment workshop. The assessment workshop  
23 report that we were referring to was put together by the  
24 assessment panel and then there's the Center for Independent  
25 Reviewers that come in and during that review process, these  
26 comments and summaries are concluded.

27  
28 **MIKE SISSENWINE:** The SEDAR review said there was no conclusive  
29 basis for assessing the status?

30  
31 **TODD GEDAMKE:** Yes.

32  
33 **BARBARA KOJIS:** Dr. Alexandridis from the University of the  
34 Virgin Islands and he's a sociologist or how would you describe  
35 yourself?

36  
37 **DISCUSSION OF PILOT ERAEF STUDY**

38  
39 **KOSTAS ALEXANDRIDIS:** Let me introduce myself. First, I am an  
40 Assistant Professor with the University of the Virgin Islands  
41 and the Center for Marine Environmental Studies, but I also have  
42 a joint appointment with the Department of Computational  
43 Sciences.

44  
45 I do socio-ecological complex systems and modeling and studying  
46 how human and ecosystems interact and so I have a PhD in Natural  
47 Resource Policy and I have been working throughout the world in  
48 community-based participatory management.

1  
2 This is a proposal that we would like to discuss that involves  
3 modifying or taking an existing framework that was developed a  
4 few years back in Australia, the Ecological Risk Assessment for  
5 Fisheries, and creates something more suitable for our region  
6 here, especially taking into account that our fisheries here are  
7 community-based and they are much involved, local communities,  
8 and they're not having the characteristics of global,  
9 industrial-type fisheries. Also, they are small-scale, with  
10 different kind of societies involved in that.

11  
12 This is a pilot study that we discussed and the idea came  
13 originally from the council, but right now, we established an  
14 understanding with St. Thomas Fishermen's Association to do this  
15 as a first stage as a pilot study, to see how we can develop a  
16 framework and a methodology.

17  
18 In this presentation, it has a level of terminology and so feel  
19 free to stop me if you need some clarifications. I tried to  
20 make it suitable to a scientific audience, to help all of us  
21 kind of discuss some of the issues involved in that process, and  
22 at the end, I have some themes for discussion and by all means,  
23 this is just an original set of ideas and I'm looking forward to  
24 your feedback on that.

25  
26 Let me give an introduction to the methods. There is a need for  
27 integrating the whole idea of social and ecological system  
28 approaches to fisheries management and I think this is implicit  
29 and explicit in a lot of directions that both federal and  
30 regional and local approaches are heading.

31  
32 If we look at the traditional ERAEF approach and I kind of  
33 avoided extensively going through that, but there are generally  
34 four distinct stages and this is taken from the regional  
35 methodology paper by Hobday et al. from Australia.

36  
37 The first stage they propose is a scoping kind of process, to  
38 which they establish the scope and context and identify and  
39 document objectives and create a hazard identification,  
40 according to a kind of traditional risk management process of  
41 hazard exposure and uncertainty.

42  
43 The second stage, and this is fairly qualitative, but the way it  
44 was designed originally, it's broad, big stakeholder driven and  
45 not as much community-based and not very much participatory.

46  
47 Then the Level 1 assessment is trying to use this very  
48 rudimentary qualitative and expert, quote, unquote, opinions to

1 come up with some assessment of initial assessment of risks and  
2 then, of course, you have a second level that takes this kind of  
3 assessment of risk and creates criteria for evaluating those  
4 into different types of considerations, including uncertainty  
5 considerations. Finally, they take that to create an analytical  
6 unit-by-unit spatial and temporal dynamics.

7  
8 This is what some of the changes and what the ideas we're  
9 introducing here and it's including more social and economic and  
10 behavioral approaches as a system, as an interactive system,  
11 between the social component, the community and the society, and  
12 also the marine environment to which those livelihoods are  
13 determined.

14  
15 We want to -- We propose, through these methods, to integrate  
16 the science of the whole society and environment nexus,  
17 especially with emphasis on the fishing communities and so this  
18 framework needs to focus on certain human dimensions and  
19 especially the ones that involve the risk and the uncertainty  
20 that exists in decision making in terms of fisheries.

21  
22 Of course, the ecological and ecosystem-based dimensions, but  
23 also very much we are missing, in a lot of our assessments, the  
24 emphasis on the actual feedback and interaction mechanisms  
25 between the two major subparts and so we need to just emphasize  
26 those systemic feedbacks and dynamics rather than just  
27 enumerating or creating a list of single components.

28  
29 We also need to provide scientific evidence at the fringe of  
30 that fisheries policy domain. I think we critically, especially  
31 in this region, we lack this kind of robust and rich evidence-  
32 based science that informs our policy decisions and, of course,  
33 we need to reduce ambiguity and uncertainty regarding  
34 perceptions of risk.

35  
36 The whole notion of risk, while in the ecosystem-based or  
37 ecologically, might be something that can be evaluated  
38 relatively, but the reality is that a lot of the decisions that  
39 filter through the community and the society and the policy and  
40 management framework, they are subject to perceptions of risk.

41  
42 Of course, how we can redefine the risk assessment process to  
43 include and integrate community aspirations, attitudes, beliefs,  
44 and specific behavioral mechanisms that play a key role in  
45 decision making, especially at the individual and subgroup small  
46 community group of fishermen.

47  
48 Let me give you an idea of what is the socio-ecological system



1 perspective from the relevant theory. At the global scale, we  
2 have both ecological and social properties that occur and  
3 they're out of our immediate controls.

4  
5 From the ecological perspective, we have both spatial and  
6 temporal changes that come from climate, regional marine and  
7 biota changes and changes in distributions and species  
8 composition and so on and so forth.

9  
10 On the other hand, we have social properties that come from  
11 outside of the system and include the regional fisheries, the  
12 governance systems, the regional economies that not necessarily  
13 are driven or controlled at the local level, but those exogenous  
14 controls on both ecological and social properties interact  
15 directly with a range of slow variables that include changes in  
16 marine resources, the species distributions at the local levels,  
17 the disturbance regimes that we actually experience.

18  
19 On the other hand, there are slow variables related with social  
20 properties and socioeconomic. The social composition of the  
21 dynamics of the population, the infrastructure changes, the  
22 cultural ties that the communities have and the fishing  
23 communities have with the local population and, of course, the  
24 historical connection to fisheries.

25  
26 Some communities have different types of ties than others, but  
27 those variables are operating with the local socio-ecological  
28 system.

29  
30 On the other hand, we have a number of fast variables that  
31 operate, like the composition that changes on the habitat and  
32 spatial locations, the densities of fish species at different  
33 communities and events that happen, hurricanes and other  
34 ecological events.

35  
36 On the hand, we have fast variables that relate to the social  
37 and economic properties, including community income, population  
38 densities, accessibility to resources, livelihood dependences,  
39 including livelihood choices and livelihood outcomes. All of  
40 those are kind of relatively fast variables and work in parallel  
41 with the slow processes of social changes and ecological  
42 changes.

43  
44 Of course, human actors interact with all of those. They  
45 interact and they are being influenced and being influenced by  
46 exogenous controls. They interact over a long time with slow  
47 variables and fast variables and there's environmental impacts  
48 and social impacts that are related with ecosystems services and

1 socioeconomic services, and service provisions, respectively.  
2  
3 This is kind of a birds-eye view of how some of the dynamics  
4 that we observe at the system level come together to help us  
5 understand that socio-ecological system perspective.  
6  
7 Of course, we have institutional properties. Management and  
8 policy impacts and filters through human actors and filters back  
9 to those variables and creates those feedback loops and  
10 mechanisms that really influence how the system evolves over  
11 time.  
12  
13 This is a kind of theoretical perspective that we take to  
14 address this problem here and so we have that socio-ecological  
15 system as a system, but we need not to forget that there is  
16 exogenous controls and exogenous to the system that we need to  
17 address.  
18  
19 We need to address a critical need into that process that  
20 doesn't exist in the traditional ERAEF and in order to assess  
21 that coupled socio-ecological risk, we need to ground what we  
22 mean and what the community level of risk perception is and we  
23 need to do that using an evidence-based community assessment.  
24  
25 Risk perceptions are likely to vary by culture and social  
26 composition of the fishing communities. Risk perceptions change  
27 as population and demographic structures change at different  
28 spatial and temporal scales. Risk perceptions are most likely  
29 to differ in Puerto Rico and the different islands of the USVI  
30 and so on and so forth.  
31  
32 We also face a range of differentiation that affects risk  
33 perception according to different socioeconomic realities that  
34 fishing communities are facing.  
35  
36 Of course, different communities have different levels of how  
37 the role of realism on how achievable certain envisioned  
38 livelihood choices and outcomes are and, of course, the range of  
39 institutional, both formal -- This committee and the council is  
40 an example of formal institutional arrangements, but there is  
41 also informal, like the norms and different community structures  
42 that are in place to support or sometimes create problems in  
43 achieving outcomes or how risks are perceived at that level.  
44  
45 Of course, market composition and structures. Only within the  
46 USVI we have different islands that have different market  
47 structures and we have within the same island, we have different  
48 types of market structures.

1  
2 For example, lobster fisheries are operating at the tourism and  
3 industry and the hotels and restaurant business and on the other  
4 hand, fish trap fisheries are more kind of addressing the local  
5 population needs and so on and so forth.

6  
7 Of course, the most important is different parts of the  
8 community, the fishing community, might have different future  
9 visions and aspirations, attitudes, and beliefs related to those  
10 kinds of perceptions of risk.

11  
12 It's critical to study and understand that relationship between  
13 that kind of social soft, quote, unquote, perception of risk and  
14 vulnerability and their direct and indirect mappings to the more  
15 objective type of ecological risk and the systemic variability  
16 that comes from that ecological risk.

17  
18 In order to do that, we have to really dive into the role of  
19 judgmental heuristics and to quote from a Nobel laureate of  
20 economics, it shows how our own judgments affect our perceptions  
21 of risk and how rational our choices are and how we perceive  
22 those risks at the fringe of that socio-ecological system.

23  
24 A specific question is the kind of composition of risk aversion  
25 and risk seeking in informing those judgmental heuristics and,  
26 of course, the perceived validity of a decision support  
27 mechanism.

28  
29 That needs to be in place in providing services that address the  
30 need for adaptation in the face of those variabilities and  
31 perhaps the need to mitigate some of those risks, especially the  
32 risk associated with livelihood dependencies and the impact that  
33 restrictions or policies or management measures have on those  
34 livelihood dependencies with the fisheries.

35  
36 How we frame the system dynamics to enable an enhanced level of  
37 stewardship for socio-ecological system-based resiliency,  
38 without that kind of stewardship, it's very, very difficult to  
39 achieve working management and long-term resilience on those  
40 systems and, of course, we need to find a way to restructure  
41 those feedback mechanisms that ensure efficient monitoring and  
42 assessment of risk and the system itself in the face of,  
43 especially here in our region, we face deep uncertainty and  
44 incomplete information when it comes to evaluating the actual  
45 state and condition of both the ecosystem and social and  
46 economic system. I hope you're following me so far.

47  
48 **BARBARA KOJIS:** Are there any questions at this stage?

1  
2 **KOSTAS ALEXANDRIDIS:** Okay. In terms of the proposed socio-  
3 ecological system, ERAEF, I think it's very important to study  
4 and understand the dynamics of emergence and whose reality  
5 counts, whose voice is heard, and how those risks are propagated  
6 through the local and regional management system.

7  
8 The second is what decision support structures and mechanisms  
9 can allow different or multi-scale dynamics to propagate through  
10 the policy system and I will explain why we need that multi-  
11 scale dynamic and, of course, transparency in the decision  
12 support mechanisms that has to enable evidence-based science or  
13 stewardship between science and society at both the local and  
14 the regional level.

15  
16 Of course, we have to go beyond the criticalities of that deep  
17 uncertainty about the future impacts and we'll talk a little bit  
18 about those, as to how we can establish risk-neutral thresholds  
19 and measures like thresholds of potential concern that could be  
20 set to bypass the gaps that we have on the data and the state of  
21 the ecosystems.

22  
23 Let me go back to the issue of scale and that's really, really  
24 important when we're looking at system dynamics and resiliency  
25 of those.

26  
27 In order to address the complexity of those coupled socio-  
28 ecological systems, we need to approach and give consideration  
29 to a multi-scale approach and we need to develop three critical  
30 scales.

31  
32 Number one is the focal scale and on the discussion, we have two  
33 options. The first will be the lobster trap fisheries in St.  
34 Thomas as a case study and the second will be the fish trap  
35 fisheries in St. Thomas, but we'll discuss potential for those,  
36 but we also need to address at least one below and one above  
37 scale and this is really, really important when we're talking  
38 about long-term dynamics.

39  
40 The one below, it's at the individual risk perception and  
41 community dynamics and the one above is looking at territorial  
42 and regional management perspectives.

43  
44 The reason is if we optimize for risk at the single scale, it  
45 does not necessarily benefit the system, because it can produce  
46 vulnerabilities to linked scales and so it might actually shift  
47 the pressure to different scales, the one above or below and so  
48 that kind of missing exogenous -- That's why the scales also

1 help us to understand those exogenous controls from those linked  
2 scales and how those externalities are entering that socio-  
3 ecological system.

4  
5 Of course, understanding how we can address risk and  
6 vulnerabilities that benefit the system as a whole without  
7 shifting those sensitivities and increasing the possibility of  
8 tipping points and collapses at other scales. That's really  
9 critical and that's why we need to look at the system at a  
10 cross-scale level.

11  
12 This is just to introduce you to some of the broad ideas that  
13 kind of play a part on what we've proposed as a scope of work  
14 and so I will go through the overview of what I think is the  
15 methodological and analytical way that we can do that, at least  
16 at the pilot research level.

17  
18 Again, as the traditional ERAEF, we propose a scoping stage, but  
19 we significantly tried to modify it. We need to establish the  
20 scope and the context and in order to do that, we have to define  
21 the sub-fisheries that we're looking at at the focal level and,  
22 again, this is open to discussion and we need to do an  
23 exploratory assessment, including the spatial and temporal  
24 ecological attributes, but also we need to look at the critical  
25 socioeconomic composition of that focal sub-fisheries system.

26  
27 We also propose an inventory of community livelihood capacity  
28 for achieving sustainable fisheries and that hasn't been done  
29 before and there's a great opportunity to start looking at what  
30 are the livelihood choices and options that actually relate with  
31 critical ecosystem-based state and changes.

32  
33 Of course, looking at the management and policy, at least at the  
34 scoping stage, from a descriptive mode and how it plays a role  
35 to the focal sub-fisheries system.

36  
37 Then we think at that kind of scoping stage that we need to  
38 identify and document the vision, goals, and objectives of this  
39 assessment and so we propose an initial set of community and  
40 subgroup visioning exercises, structured visioning exercises, to  
41 help the community to self-identify the vision and goals and  
42 objectives for that exercise.

43  
44 We need to derive and with the research framework we propose, to  
45 help the community to come up with a collaborative vision  
46 statement that actually encapsulates what the focal system is  
47 about and then we need to -- We propose to derive an initial set  
48 of goals related to that focal system and from those goals,

1 establish tangible and intangible objectives to achieve those  
2 goals and all of those in a participatory mode in a core  
3 research kind of framework.

4  
5 Then what we propose is through that first stage of identifying  
6 and documenting that vision, goals, and objectives in a clear  
7 and transparent manner, to move to participatory scenario  
8 building exercises.

9  
10 That would involve both qualitative and mostly qualitative and  
11 descriptive focal scenarios and so we need to understand  
12 directions or trajectories that could play a part, or at least  
13 the community feels it could play a part, in the future across  
14 different scales.

15  
16 Then from those broader scenario narratives or qualitative  
17 exercises, to work with the participants to identify key  
18 scenario elements and those scenario elements could be the  
19 measureable components that will play a role on evaluating that  
20 self-perception of risk.

21  
22 On the parallel, we need to establish community-driven themes  
23 that will help us set up a series of thresholds of potential  
24 concern and especially in areas where uncertainty is deeper and  
25 there is not information.

26  
27 The way that thresholds of potential concern -- They're  
28 originally arbitrarily chosen, but then they're calibrated to  
29 actually be set at a level that is deemed by the community safe,  
30 one that triggers different decision support mechanisms.

31  
32 Of course, the third kind of part of this process, the scoping,  
33 is to initially assess the community potential for self-  
34 organization. Because there is a lot of theoretical and  
35 empirical work being done on socio-ecological systems showing  
36 that without that potential for self-organization it's very,  
37 very difficult to establish management and especially in the  
38 face of the tragedy of the commons or managing the commons.

39  
40 That, we'll go through exercises that help us as scientists  
41 evaluate the shared mental representation of those risk  
42 perceptions through a mental mapping exercise. It will help us  
43 set up a stage of scale development and benchmarking that we'll  
44 be using for belief, attitudinal, and aspirational elicitation  
45 in the next stage and frame the decision making in terms of the  
46 management and policy objectives from the ground up.

47  
48 Of course, through that process, it will help us create a list

1 of initial hazard identifications and so we need to derive an  
2 inventory of hazards related to that focal subsystem and we need  
3 to identify three trajectories for each of those broader  
4 hazards, the best, the worst, and the most likely conditions  
5 that those hazards are to be addressed at.

6  
7 Then, using those previously explained scenarios, to map those  
8 to different hazard factors and so those participatory scenarios  
9 could be used and will be used to evaluate those hazards and  
10 different varying conditions in the best, worst, and most likely  
11 scenarios.

12  
13 Then, through that process, to finalize a working set of both  
14 the scenarios and the related hazards and the different types of  
15 varying conditions and at the same time, revisit and benchmark  
16 those thresholds for potential concerns and have the map also  
17 with hazard factors and conditional elicitation. What set of  
18 conditions are likely to trigger concern and what kind of level  
19 of potential concerns should be there?

20  
21 Of course, in a risk assessment, we need to identify not just  
22 the hazards, but also the exposure to those hazards and so a lot  
23 of parts over a socio-ecological system have different levels of  
24 exposure to this. Certain livelihood options, for example,  
25 might have different smaller or bigger exposure to different  
26 changes at the ecological or ecosystem states.

27  
28 Then we get all that information that we use to assess the risk  
29 perception of the fishing community and that's going to be at  
30 the scientific level.

31  
32 We need to derive the risk-averse list of items and events and  
33 practices within those focal scales and domain of assessments  
34 and then we need to get the scale benchmarking to develop a  
35 scale through a scale development, a psychometric scale  
36 development, that captures risk profile characteristics and  
37 shapes those community risk perceptions with respect to  
38 different hazards.

39  
40 Then we have to elicit the hazard-response function and so using  
41 that scale, we can actually map out the scale response for  
42 different parts of the community we're assessing and, of course,  
43 using all those different factors to provide a multivariate  
44 factor analysis and a multidimensional scaling that will help  
45 standardize those composite measures and come up with a set of  
46 underlying factors that captures that variation in individual  
47 and group assessments.

48

1 For those of you that are not familiar with this, the  
2 multivariate factor analysis is the variability among observed  
3 and associated items with respect and response to theoretically  
4 unobserved latent variables and those will be the risk  
5 perceptions and so those factor loadings reflect joint profiles  
6 of association of different types of correlating structures  
7 among observed variables in terms of explaining unobserved  
8 latent variables.

9  
10 On the other hand, multidimensional scaling helps us, instead of  
11 focusing on variables, looking at participant groupings and with  
12 respect to systematic interactions and so this helps us scale  
13 the whole kind of information visualization or shared mental  
14 representations and explore different similarities or  
15 dissimilarities of those associated responses and so both of  
16 them contribute.

17  
18 The first contributes understanding how variables are connected  
19 with each other and with theoretically unobserved ones, but the  
20 other is helping us understand how shared responses or  
21 similarities exist among participants.

22  
23 This would help us to create a vulnerability kind of scoring and  
24 so we need to integrate, by physical considerations, different  
25 species, habitat, distributions, the data we collect.

26  
27 The focal scenarios, we aim for three to five ranked scenarios  
28 in terms of importance or more likelihood of, at least at the  
29 community perception, to happen in the future.

30  
31 The TPCs and the measureable distributions, multiple TPCs across  
32 the worst, most likely, and best conditions and, of course, the  
33 results and classifications from the factor and multidimensional  
34 scaling coordinates and then we can use this to create  
35 standardized and create composite factors.

36  
37 The alternative to that is to use a more kind of smart, non-  
38 linear algorithm to actually come up with composite factors,  
39 like a tree-augmented Naïve Bayes algorithm or an ANN algorithm  
40 that helps take all those factors and kind of create composite  
41 measures.

42  
43 In the regional ERAEF, they propose tossing out low-risk  
44 potential activities. I think I would be more inclined to keep  
45 them into the analysis, to actually realize the systemic  
46 boundaries of those conditions that we're looking at. Thus, we  
47 focus on not just the medium and high risk, but also the low-  
48 risk considerations to create those risk profiles.



1  
2 This is Stage 2 and this process would revisit and refocus the  
3 whole Level 2 scale intensity consequence analysis of the ERAEF.  
4 The ERAEF analysis is very weak because there's no justification  
5 and it's all very subjective and it's top-down without being  
6 grounded in actually scientific evidence and so this really  
7 important, to come up with a more objective way to address  
8 those.

9  
10 Then the third stage is susceptibility analysis and so this is  
11 kind of modifications from that productivity and susceptibility  
12 analysis as proposed by ERAEF and so we propose a focus on both  
13 the productivity -- The regional one was only on productivity,  
14 but also I think we should be focusing on the resilience of the  
15 system, to emphasize the robustness rather than just  
16 optimization, because if we optimize the system too much, we  
17 make it vulnerable and prone to catastrophic collapses and  
18 cascading effects.

19  
20 We need to focus to both the fast and slow variables and  
21 external controls as well, to understand how those contribute to  
22 the productivity and the resilience of that system.

23  
24 Then we need to be adding additional emerging factors and  
25 attributes to be used. We need to derive a more balanced  
26 approach in a coupled socio-ecological system and so we need to  
27 focus on interactions and so not just enumerate the two  
28 components, but actually look at how they interact with each  
29 other.

30  
31 For example, how species and stock dynamics interact with  
32 livelihood considerations or how selectability affects economic  
33 investment and financial capital availability at the community  
34 level or how fishing effort intensity interacts with social  
35 capital intensity and the ability for social cohesion that helps  
36 manage the resources more efficiently.

37  
38 All those things need to be addressed and those capital  
39 interactions need to be looked at carefully and so this process  
40 requires us to deviate from the simplistic and the regional  
41 ERAEF uses a logistic model of assessment.

42  
43 We want to consider pattern recognition and non-linear  
44 interactions, considering sigmoid functions through a Neural  
45 network algorithm or a tree-network learning and more likely, it  
46 will help us capture the complexity of those interactions and  
47 feedback mechanism on the whole system.

48

1 In terms of uncertainty, there is two considerations of  
2 uncertainty when it comes to susceptibility analysis and  
3 determination of that coupled risk assessment.

4  
5 One is often called the endogenous uncertainty and that stems  
6 from the level of the interactions among or across those  
7 systemic components within the same system and can induce  
8 stability or instability dynamics. It determines, for example,  
9 equilibrium states, regime shifts, tipping points that appear  
10 within that socio-ecological system.

11  
12 Focusing on endogenous uncertainty allows us to explore the  
13 boundary condition that frames the system risk and vulnerability  
14 responses at the community level.

15  
16 The second part is the exogenous uncertainty that stems from  
17 that cross and intra-scale dynamics and interactions between the  
18 individual cognitive approaches, the collective and group  
19 dynamics, and the institutional dynamics in both spatial and  
20 temporal scales.

21  
22 It is related with the concept of exogenous controls and  
23 positive or negative externalities that propagate through the  
24 system and study of exogenous uncertainty allows framing from  
25 the conditional risk inferences and so what are the external  
26 conditions that bound our system to its internal boundaries?  
27 That links with scenario exercises that we talked about in the  
28 scoping stage.

29  
30 The final part is how those things come together and so we  
31 propose first a pre-assessment. We need to evaluate the  
32 outcomes of the susceptibility analysis in conjunction with the  
33 previous stages, including the scoping assessment, the scenario  
34 development, the thresholds for potential concerns, and the  
35 factoring of the risk perceptions into the multidimensional  
36 scaling and multivariate factor analysis.

37  
38 That will allow us to provide a hierarchical ranking of  
39 priorities and refocusing those potential concerns, risk-related  
40 potential concerns, across scenarios with emphasis on providing  
41 the consideration for the focal trigger and so in the focal  
42 specific system, what can trigger management intervention and so  
43 what those should be.

44  
45 What are the priorities for periodic short, near, and long-term  
46 measuring assessment and evaluation? How do we monitor those  
47 changes at both the social and ecological system?

48

1 We need to revisit the outcomes at the crossroads and so what we  
2 propose is at that pre-assessment stage to revisit the focus  
3 groups at different stakeholder scales, from the community to  
4 the decision making stakeholders to the management and policy  
5 stakeholders and help us perform a qualitative sensitivity  
6 analysis with respect to going back and how those assessments  
7 help us to address our visions, goals, and objectives.

8  
9 The final outcome here is we hope that through that process that  
10 it would allow us to construct a decision support system  
11 mechanism that aids decision making based on new evidence  
12 entering in the system in real time and so what we hope to and  
13 what we expect to deliver is a Bayesian decision network that  
14 allows us to do a diagnostic inference related to risk and  
15 vulnerability assessment, a multi-scenario and multi-scale  
16 approach that can be used for future considerations and mapping  
17 future changes and decisions.

18  
19 It will enhance our ability to introduce real-world evidence at  
20 real time and across different spatial scales and it will  
21 enhance our ability to derive multiple and multidimensional  
22 what-if analysis.

23  
24 Because this is a diagnostic inference tool, it allows us to  
25 back propagate and say what if we had those conditions in the  
26 future, how would it affect things happening today or somewhere  
27 in the middle of the road and we can also do the same thing and  
28 how decisions and conditions here, at this point, can affect  
29 states of the system in the future.

30  
31 Of course, through that assessment outcome, we need to derive a  
32 method for calibrating and revisit the methodology of the ERAEF  
33 and so improving it and making it more appropriate for local  
34 communities and making it more grounded in empirical  
35 sociological, coupled socio-ecological, realities.

36  
37 What we propose at the end of this process is to take that  
38 knowledge and training to run some training across multiple  
39 stakeholder groups, elicit feedback and provide evaluation for  
40 future developments to establish an enhanced decision making  
41 capacity.

42  
43 I think this is really critical. A lot of our decision makers  
44 at the fishing community level do not have the required  
45 understanding of the science behind a lot of those processes and  
46 so by creating a participatory collaborative research framework,  
47 we are allowing to grow their understanding of that system with  
48 the scientists.

1  
2 Of course, customize our inferences to different kind of  
3 conditions that we're facing in the Caribbean region. Of  
4 course, this is a pilot study, but it will allow us to derive a  
5 method for which we can scale up and so this is -- In terms of  
6 the co-research framework, we engage the community in four  
7 stages.

8  
9 The first is the first stage of the scoping and community  
10 capacity for that coupled assessment and so we are planning for  
11 initial focus groups that will help us derive vision and goals  
12 and objectives, the scenario development exercises and deriving  
13 of the thresholds of potential concern themes and, of course,  
14 the management policy participatory exercises, hopefully we'll  
15 do those with bigger stakeholders, including council  
16 participants and different management agencies involved into the  
17 decision making.

18  
19 Stage 2 is assessing the focal system vulnerability and so we  
20 need to calibrate with the community those participatory  
21 scenarios. We need to benchmark those TPCs and we need to  
22 standardize and synthesize composite risk assessment indices.

23  
24 On all the stages, the community participation is critical and  
25 then Stage 3 is the susceptibility analysis and so we need the  
26 stakeholders and this is not just the community, but the whole  
27 stakeholder mapping and planning stage for how we address  
28 uncertainty, both endogenous and exogenous, and we have the  
29 fishing community that can look at the endogenous uncertainty,  
30 the focal scale set above and below, looking at the propagation  
31 of exogenous controls, and all of us together, we can actually  
32 contribute to that assessment to be used for the susceptibility  
33 analysis.

34  
35 Of course, the final stage, where we need to do the pre-  
36 assessment and calibration for the focus groups and take the  
37 final modeling and tool development and the software back to the  
38 user groups and train them and report and elicit final feedback  
39 about how useful this process was for the communities and the  
40 stakeholders engaged in the process.

41  
42 Let me say some final thoughts about integrated partnerships.  
43 Of course, we hope to have a very close relationship with the  
44 council. We hope to have a project steering committee from the  
45 council here and I know that initial thoughts was for the  
46 council to establish an external consultant and also  
47 participation with the ERAEF team and so we're also looking  
48 forward to that.

1  
2 Of course, we also have a close collaboration with the St.  
3 Thomas Fishermen's Association. The chief scientist, Dr. Olsen,  
4 is also going to be a co-PI in this proposal and so he will help  
5 in building that community capacity and expertise for assessing  
6 the risk and vulnerabilities of the local community and help  
7 enhancing the self-organization potential and improve the  
8 cohesion that we need to the local fishing groups.

9  
10 Of course, this is also in conjunction with our new and -- I am  
11 the coordinator of a brand new geospatial and statistical  
12 analysis facility that the University of the Virgin Islands has  
13 established this semester and we're hoping within that facility  
14 to establish a fisheries information analysis unit that is a  
15 joint venture between USVI and CMES and actually focuses  
16 exclusively on fisheries information from a data and analytical  
17 way.

18  
19 There were talks about those things for a long time, but now we  
20 are having the funding and we established the -- By February,  
21 the new center will be -- Right now, it's under construction and  
22 we have big servers and storage and we are actually going to be  
23 serving the territory spatial and geospatial and statistical  
24 analysis needs for the territorial government, according to the  
25 agreement for the USVI territorial government to have a new  
26 science plan in place and we hope to have that by the end of  
27 this year.

28  
29 We can provide and will provide enhanced database management and  
30 online portal development for shared collaborations. We'll be  
31 setting up and all the servers are online and geospatial web  
32 portals are already in place to serve in this approach and, of  
33 course, we're going to provide enhanced computational analysis  
34 capacity, including advanced modeling and production of tools.

35  
36 Of course, we hope to establish a more kind of longer term  
37 collaboration with the local DPNR and Fish and Wildlife Service,  
38 for the agency to achieve data sharing and also training of  
39 officers to focal community engagement and collaboration,  
40 engaging stakeholder groups of the local agencies for the study  
41 assessment, and providing useful input on both the visioning  
42 exercises, the scenario building, the threshold for potential  
43 concern, and also to provide input to decision making and  
44 decision support mechanisms. This is the co-research framework  
45 that we hope to strengthen our ability to put value into that  
46 scientific analysis.

47  
48 This is the proposed study completion and so we request for a

1 year-and-a-half, starting in January and we propose ending by  
2 May of 2013 and so the first few months, we're going to finalize  
3 the methodology and establish and plan the community engagement,  
4 including recruiting graduate and other personnel.

5  
6 We hope by July of 2012 that we will perform and deliver a  
7 scoping assessment and complete that process and then during the  
8 summer, we will do the data analysis and come up with a focal  
9 vulnerability and finalize the modeling part of that process and  
10 then from October to January of next year, we perform the  
11 community-based participatory susceptibility analysis and  
12 modeling and then for the next few months, we focus on the final  
13 assessment, the pre-assessment that requires engagement of wider  
14 stakeholder groups. The final few months is just for  
15 delivering and reporting. Those points there with the orange  
16 circles indicate specific deliverable or milestones that we hope  
17 we can meet.

18  
19 Of course, this is something for your consideration and I would  
20 be willing to discuss different type of timelines and this is a  
21 very indicative budget consideration and so this is also for --  
22 This is the cost that we evaluate through the study and that is  
23 about \$112,000 for a year-and-a-half.

24  
25 That includes also both the USVI and the non-USVI community  
26 engagement and travel and different equipment that we need for  
27 that and the justification is here and so I will have a two-  
28 month, two-academic-month, contribution to that project and  
29 also, the STFA will take over, through a subcontract, the  
30 development of the capacity of the community level.

31  
32 We also propose one graduate Masters Of Marine Environmental  
33 Science research assistant, through the USVI stipend system.  
34 That includes a whole full year, including summer.

35  
36 Also, a few undergraduate assistants that will help input data  
37 and preparation and field work assistance and a little bit of  
38 money for data management processes and hosting databases and  
39 collaborative spaces for the project and also for the community,  
40 with public access.

41  
42 Of course, the community engagement and equipment costs and so  
43 travel and presentations and then, of course, software that we  
44 need, cost sharing at least for the software, and transcription  
45 and recording of audiovisual materials and supplies and various  
46 few remainder costs.

47  
48 I think that is it from the presentation, but I have some topics

1 that I can open the discussion on that and so the first is what  
2 you think is most -- For us, I think we are flexible on that  
3 part, what is the most appropriate kind of focus subsystem to do  
4 this, but with the understanding that there are differences  
5 between them.

6  
7 The lobster trap fisheries are more focused on more commercial  
8 aspects or tourism-based kind of market dynamics and it affects  
9 different fishermen subgroups within St. Thomas. It addressed  
10 different demographic and social needs of the population  
11 compared to the fish trap fisheries.

12  
13 Then maybe we can discuss the role of the council and the  
14 committee in the process. We would like to see an enhanced kind  
15 of collaboration to that process and what are the set of  
16 priorities, from all the things that we actually talked about,  
17 do you think we need to be focusing more and how we can build  
18 capacity building potential for doing that and scaling it up to  
19 different case studies and maybe eventually helping us do a  
20 region-wide assessment.

21  
22 We can discuss and we are open to working with other groups to  
23 do parallel case studies, at least after the initial scoping  
24 kind of process, and any other scientific considerations or  
25 management or policy considerations, I'll be eager to hear your  
26 opinions and thank you.

27  
28 **BARBARA KOJIS:** Thank you very much. Questions?

29  
30 **TODD GEDAMKE:** Kostas, first of all, congratulations on the  
31 geospatial stats facility. I'm glad to hear that that's  
32 happening. I think, Barbara, I guess my question is more to you  
33 right now, just in terms of our role in commenting on this.

34  
35 I assume that we're supposed to be getting some discussion going  
36 regarding this as proposed work and providing feedback. Are we  
37 providing recommendations to the council as to whether this  
38 should be funded or not funded or are we providing more  
39 qualitative advice or do we have any specifics on what we're  
40 more or less supposed to be doing with this?

41  
42 **BARBARA KOJIS:** Graciela, correct me if I'm wrong, but my  
43 understanding is that we're to recommend to the council whether  
44 or not this sort of program should go forward. If we do think  
45 this should be going forward, how should it be going forward,  
46 recommending things like what should be within the scope of work  
47 and so on.

48

1 I believe this still has to go out for bid and so even though he  
2 made the presentation and he obviously has the contacts and  
3 everything else over there, but I think technically the council  
4 still has to put this out for bid and so we need to go over this  
5 and first of all, decide whether or not we think it's a good  
6 idea to go forward and then what sort of scope of work -- If we  
7 do think it's a good idea, what should be the scope of work be  
8 for it? Graciela, do you have any other comments?

9  
10 **GRACIELA GARCIA-MOLINER:** What the council wants to know is  
11 exactly what you said, if we should go forward with the social  
12 and cultural aspects of the project and what kind of pilot  
13 project, because that's basically what it is, should we go on,  
14 whether it's the lobster trap or the fish trap fisheries.

15  
16 St. Thomas seems to be the natural ambiance to develop the  
17 project at this stage. The budget, the council hasn't seen it.  
18 This is the first time that it's on the table and the funding --  
19 There are many ways of funding a project and parts of it. That  
20 would be the other thing.

21  
22 I don't know if there is specific monies that have been assigned  
23 for something like this, but this is all the development of the  
24 Fisheries Forum in Puerto Rico at the beginning of the year and  
25 this is something that the stakeholders that were present were  
26 very much interested in having in the area and so that's how  
27 this has come about.

28  
29 They asked the SSC to comment on the potential of the project  
30 and on what you have seen and whether you need more information  
31 to develop a formal proposal, et cetera, if you need something  
32 to be changed. It's very different from a SEDAR process, per  
33 se, because this one is more looking at the economic and the  
34 social aspect that goes into the assessment of the fishery and  
35 so a bottom-up approach in that sense.

36  
37 **BARBARA KOJIS:** One just comment. There was a bunch of  
38 information on ERAEF that was provided to everybody and maybe  
39 this is a question to you as well, but that information seemed  
40 to emphasize, while there was somewhat of a bottom-up approach,  
41 because you were talking to the fishermen but everybody was  
42 included in the discussion about risk assessment and so on, and  
43 the movement forward -- That ERAEF program did not have a real  
44 sociological component to it. What you're proposing, how is  
45 that differing from the original ERAEF?

46  
47 **KOSTAS ALEXANDRIDIS:** Having the experience working for five  
48 years before in Australia and with some of those people who



1 developed it, although I was in a different location, but we  
2 need to differentiate the concept of stakeholders from the  
3 Australian perspective to the notion of stakeholders at least in  
4 the American way we define stakeholders.

5  
6 The Australian perspective of stakeholders is more of a kind of  
7 a European and British attitude about stakeholders being the big  
8 groups with the big power and if you say it's not necessarily  
9 participatory and it's certainly not the case with ERAEF  
10 assessments, at least the case studies.

11  
12 I did a lot of work throughout the Great Barrier Reef region and  
13 there's hardly any fishing community left anymore in Australia,  
14 at least with our standards here, and so I think the bigger  
15 stakeholders -- The only stakeholder who has any say on the  
16 fisheries, at least within fifty miles from the coast of  
17 Australia, is the Great Barrier Reef Marine Park Authority and  
18 that's the major stakeholder.

19  
20 In that sense, we propose something totally different. We  
21 propose a true bottom-up approach that engages, yes, all the  
22 stakeholder groups, going all the way to the focal areas of the  
23 scales above and below, but with primary emphasis to self-  
24 determine community-based assessment of risk perception, because  
25 at the end of the day, those are the ones who make the critical  
26 decisions that affect fisheries and livelihood related to  
27 fisheries. I hope that helps.

28  
29 **MIGUEL DEL POZO:** I don't know how to put this. I will say that  
30 in order to have an informed opinion on the project that I will  
31 need to see probably the proposal and to see a bit more of the  
32 theoretical, maybe, approach of what is a participatory approach  
33 and how this is a bottom-up approach that's different than other  
34 efforts that have been done worldwide.

35  
36 Many of the efforts globally have ended up being what has been  
37 called a boundary object, where more than participation, people  
38 arrange around the project proposed and participation is not  
39 really the outcome and so I guess I just need to read about the  
40 proposal, to read a bit more about the theoretical sampling,  
41 maybe.

42  
43 There are a few things that are not clear to me, like, for  
44 instance, like the process of self-organization of local fishing  
45 community groups. In my opinion, that's something you cannot  
46 create and it happens and it's organic, maybe. I guess my  
47 comment is that I just need to read more about it.

1 **KOSTAS ALEXANDRIDIS:** Elinor Ostrom a couple of years ago got  
2 the Nobel Prize in Economics because of her work on self-  
3 organization at the community level and in actually small  
4 communities that tried to -- She did a lot of work in fisheries  
5 from the Gulf of Mexico to Africa to all around the world and so  
6 there is a vast amount of literature establishing why self-  
7 organization at the community level really benefits management,  
8 especially in fisheries.

9  
10 There's probably a hundred different studies actually, meta  
11 studies, and I can point you to those directions, but the whole  
12 idea of self-organization and management is something that is  
13 very well grounded in the relevant theory.

14  
15 **MIGUEL DEL POZO:** When I saw the title, it just reminded me of  
16 Berkes, for instance, linking social and ecological systems, but  
17 it also reminded me of -- I'm just saying that loads of efforts  
18 and not only on fisheries, but on resource management in general  
19 and on development as well, the outcome at the end hasn't been  
20 necessarily that participatory and I just want to see more about  
21 the project and that's all.

22  
23 **JORGE GARCIA:** A comment. I have, for several years now, heard  
24 the St. Thomas fishermen talk about their fisheries in these  
25 kind of meetings and they claim that their fisheries are well  
26 managed and they're doing okay because it's a demand-based  
27 fishery and it's very simple.

28  
29 They fish as long as there is a demand for their fish or for  
30 their catch and so now I'm thinking about all these very complex  
31 management schemes to be applied on a very simplistic fishery  
32 and it's kind of like a contrast there of how do you -- What  
33 would be the justification of applying such a complex management  
34 plan to be what they claim to be a very simple fishery?

35  
36 **KOSTAS ALEXANDRIDIS:** I think a lot of complex systems  
37 scientists how a very simple phenomena can have a very complex  
38 system that actually drives those and take, for example,  
39 patterns of residential segregation and Thomas Schelling saw how  
40 complex patterns of different types of rules give rise to  
41 patterns of segregation at residential locations.

42  
43 There is a lot of actually complex systems sciences and the  
44 Santa Fe Institute is leading on that. They're showing how very  
45 simply climatic interactions really are based on a very complex  
46 system of interactions and there was a *Science* paper a few weeks  
47 ago that actually showed how El Nino changes drive conflicts at  
48 regional scales, especially within the tropics around the world.

1 Actually, that relationship between biophysical changes like El  
2 Nino and actually social changes like conflict and words, it's  
3 profound, but it's not simple. The idea of what we see is  
4 simple, but the reasons why those things interact and what  
5 interactions enable them might not be so simple.

6  
7 **JORGE GARCIA:** Of course from your perspective they are not  
8 simple, but I'm talking from the perspective from the fishermen  
9 and don't think on your side. Think on their side and how do  
10 you plan to engage a community of fishermen that have always  
11 thought that they are managing their -- Their management of  
12 their fisheries is well done and has been consistent through  
13 time because it's a demand-based fishery.

14  
15 Do you really think that they would be interested in trying to  
16 apply such a complex management scheme on their fisheries when  
17 they believe that they've been doing well for decades?

18  
19 **KOSTAS ALEXANDRIDIS:** I now get your point and you're right and  
20 that's the need, actually. If we are to manage a system  
21 successfully, we need to help the community and the stakeholders  
22 to all see that there is no easy button to solve the problems.

23  
24 We need to understand the complexity and respect it and that's  
25 the effort and I think the last year or so, at least the St.  
26 Thomas Fishermen's Association, and I think the whole fishing  
27 community, at least in the USVI, started working with us to  
28 really enhance that level of understanding.

29  
30 I'm very confident that at the end of this process that not only  
31 can we have a valid scientific tool, but as a side to that  
32 process, we might increase the understanding of the fishermen  
33 and the fishing community of how complex those issues might be  
34 and they may be more willing to give a thought in things that  
35 are not so obvious and that's my hope too.

36  
37 **MIGUEL DEL POZO:** I agree with the degree of complexity of these  
38 systems that some scholars prefer to not call them systems,  
39 because of the level of complexity and actually, to the degree  
40 of almost being chaotic.

41  
42 At the same time, I agree that there is a level, and I don't  
43 know much about St. Thomas or St. Croix and so I'm talking about  
44 Puerto Rico now, of apathy where participation really, for the  
45 primary stakeholders, it's not an option after years of top-down  
46 approaches and after years of unproductive participatory  
47 approaches and it has come --

48

1 It has developed into what I have called the  
2 institutionalization of ignorance, where you have two systems  
3 running simultaneously and ignoring each other and there is  
4 overlapping at times, but for most of the time, the management  
5 apparatus and the primary stakeholders, they run ignoring each  
6 other in certain ways and so that's something that we need to  
7 keep in mind if we want to really achieve a bottom-up approach,  
8 the fact that maybe at this stage they don't really want to  
9 participate.

10  
11 **KOSTAS ALEXANDRIDIS:** I think you're right and we have other  
12 studies that -- Not on fishing communities, but I'm doing a lot  
13 of work with conservation attitudes and environmental changes  
14 with the USVI community at least and we see that level of  
15 disengagement of the community with issues of environmental  
16 concern.

17  
18 Part of it might be cultural. I have a graduate student that is  
19 doing her thesis about looking at the socio-ecological changes  
20 in history of fishing communities in the USVI and actually we  
21 can trace some of those culturally centuries back in the history  
22 of the islands, but also a significant part of it is social  
23 composition.

24  
25 For example, studies after studies internationally have shown  
26 the important negative relationship between poverty and  
27 inequality in environmental attitudes and so part of it has to  
28 do with critical socioeconomic conditions and the way to do it -  
29 - That's why the fishing communities is a great example and  
30 livelihood dependencies.

31  
32 The more we increase the livelihood dependencies with the ocean  
33 and with the resources, the more easy it is to manage the  
34 system, because those communities really depend on the health of  
35 those resources and through those approaches, we might help the  
36 community realize that it's in the best interest to work with  
37 the scientists and with the management to create conditions that  
38 actually not only enhance the ecosystem health and state, but  
39 also improve the future livelihood options.

40  
41 Oftentimes we see livelihood options and you have choices,  
42 quote, unquote, but those choices are always leading to the same  
43 outcomes, which is poverty or inequality. We need to change  
44 that.

45  
46 We need to actually make meaningful livelihood choices available  
47 for the community, but I think fundamentally you're right and  
48 it's something we need to improve. Otherwise, I don't see how

1 we can change the minds and the hearts of the people who are  
2 managing that system on the everyday -- At least they're  
3 responsible for changes that are happening in that ecosystem.

4  
5 **MIKE SISSENWINE:** I would like to get back to what our charge is  
6 and that is to give some feedback to the council as to whether  
7 this should be supported or not. I guess I've heard a lot in  
8 the discussion that sort of has two different endpoints in mind.

9  
10 One of them is understanding and we could use that term fifty  
11 times in describing it, understanding the system and what  
12 motivates people and so on. That I would view as an outcome  
13 that's a research outcome and the other was a tool, which I'm  
14 presuming is an outcome that's more operational in terms of  
15 helping the council.

16  
17 I feel comfortable and well, first, if it's a research outcome,  
18 my personal reaction is it's worthwhile and I'm sure it will be  
19 well done and so on, but in keeping with the previous comment,  
20 there ought to be some sort of formal proposal review process,  
21 peer review process, like any other research proposal and the  
22 decision should be made based on that.

23  
24 I have no reason to question that it won't be a very favorable  
25 outcome, but that's the proper way to handle a research  
26 proposal.

27  
28 It's not clear to me why the council would be funding a research  
29 proposal and so then we get back to the tools part and that  
30 concerns me. I understand how this can result in a tool where  
31 communities come together and agree on some management actions  
32 which they collectively agree, and maybe there's scientific  
33 input to it, would avoid these high-risk outcomes or scenarios.

34  
35 I don't see that that framework as an outcome and as a tool fits  
36 National Standard 1 Guidelines. Is there going to be an outcome  
37 that results in something that allows this SSC to then recommend  
38 an ABC that has a scientific basis that tells us it will have  
39 some reasonable risk avoidance of fishing in excess of FMSY?

40  
41 That's the framework we're operating under and I don't see that  
42 that's the outcome. I see a lot of research outcomes and  
43 understanding of dynamics, potentially. I see a lot of,  
44 hopefully, community buy-in on some useful things to do that  
45 would be perhaps advanced management and conservation from where  
46 it is right now, but I don't see that there's going to be a new  
47 outcome, immediately at least, that gives us the basis for  
48 anything different than averaging catches in order to estimate

1 an ABC.

2  
3 I used the word "immediately" because maybe in the long term  
4 there would be, if there's enough community buy-in such that we  
5 get much better data, but that's not a short-term fix. That's  
6 quite a long term fix and so that's really where I'm coming from  
7 on it, is it's potentially great research and interesting and  
8 useful, but I don't see the clear connection to how it's going  
9 to be operationalized within the framework of National Standard  
10 1 Guidelines.

11  
12 I understand how it's been operationalized within the Great  
13 Barrier Reef and other places that have the luxury of operating  
14 under a less rigid framework.

15  
16 **VANCE VINCENTE:** Thanks for the presentation. I can see  
17 definitely some very positive things coming out of your research  
18 and it may help us answer questions that we have repeatedly  
19 asked ourselves in our meetings, like what the effect of  
20 exogenous events, such as a hurricane, be reflected in the  
21 statistics that we are analyzing to establish ACL and OFL and et  
22 cetera. I definitely see the use.

23  
24 My question is it possible to do it by phases? I definitely  
25 would support the research, but my question would be by states.  
26 I saw that there are different levels in the approach and for it  
27 to be practical, do you have to complete the whole process or  
28 could you do it at different stages and then look at the results  
29 and see how effective it is in helping us making management  
30 decisions and then give a presentation then to see if we can go  
31 into a second phase?

32  
33 I'm a little worried about the funding and I'm not the one  
34 funding it, but I know how the funding situation is right now.  
35 Believe me. I'm suffering that now myself and so that's my  
36 question, to see if it can be done by stages and can be broken  
37 down or you have to go through the whole process for the outcome  
38 to be efficient.

39  
40 **BILL ARNOLD:** I just wanted to build on that question, because I  
41 wanted to go the opposite direction. This is a pilot project  
42 and my question was going to be when you're done with the pilot  
43 project, is there any tangible and applicable that comes of it  
44 or will you not achieve a state of utility until you conduct the  
45 full-blown project? If you have to go into a full-blown project  
46 to really get to useable outcomes, what would be the total cost  
47 of the project to get to that level?

48

1 **KOSTAS ALEXANDRIDIS:** To the first question, I would have to  
2 think about that. I'm not sure how -- Potentially, it might be  
3 possible to do it by stages. You would need to do a little bit  
4 of recalibration, but on the other hand, and I think that's what  
5 the council wanted is, also through that process -- Yes, it is  
6 research, but it's very difficult -- The SSC, by itself last  
7 year on its recommendations, requested for more behavioral and  
8 social input into that process and without research, we have not  
9 much information on many studies.

10  
11 Without scientific published and peer reviewed processes, those  
12 things can never find their way to the management and that's the  
13 first kind of need.

14  
15 The second is education and not just as an academic institution,  
16 but the region needs people who are trained and educated and  
17 understand those things and so that's why we're engaging  
18 graduate students and undergraduate students, so we can build  
19 the capacity of future management officers.

20  
21 One of my graduate students just started working with the  
22 fishing community in St. Croix and we start building that  
23 capacity of understanding the fundamental kind of aspirations  
24 and needs of the community and how it works itself to the  
25 management process.

26  
27 I think part of this process is it's really important to create  
28 that capacity at the academic level that leads to building  
29 capacity at the territorial or the regional level of people who  
30 have the skills to do those things.

31  
32 It's yes and no. I think there might be the potential to do  
33 that. I'm not sure how meaningful if you leave outside external  
34 controls or you don't look at the focal scales and we might  
35 mitigate some of the risks into different kind of scales.

36  
37 On the other hand, this pilot study will deliver tools, a  
38 decision support mechanism formally. It would deliver a new  
39 methodology and a report to that end and it would deliver a set  
40 of risk measures, composite measures, that actually can be used  
41 for evaluating risk and vulnerability, especially for areas  
42 where data does not exist.

43  
44 There is tangible outcomes for that and there is quantitative  
45 kind of factors that will be creating those composite risk  
46 profiles, but it's not going to be just ecological risk, but it  
47 will be incorporating also social and economic risk perceptions  
48 into that.

1  
2 I don't know if NOAA or the council wants to consider those, but  
3 from a scientific perspective, they are as valid as just going  
4 measuring things in the ecosystem or an ecological kind of  
5 state.

6  
7 For me as a scientist that's involved with social and -- All  
8 those assessments will be through scale calibrated psychometric  
9 measures and so it's no different than taking an IQ test, for  
10 example, or doing an attitudinal psychometric -- We will be  
11 developing instruments, psychometric instruments, for assessment  
12 and we'll be incorporating them into the risk assessment and so  
13 I hope that answers your question.

14  
15 **BILL ARNOLD:** You term it a pilot study and I could be  
16 incorrect, but I interpret that as at least suggesting that  
17 there would be a larger follow-on study if this is successful  
18 and I was just curious as to whether that is the case. Maybe  
19 this is the be-all-end-all for this kind of study and if not,  
20 what kind of real obligations are you creating to get this done  
21 right in the long term?

22  
23 **KOSTAS ALEXANDRIDIS:** It's one case study and one case study  
24 doesn't mean that those risk considerations are valid for other  
25 communities and so we actually need to start scaling it up or  
26 doing alternative studies later on and I think that's what the  
27 council wanted, to think how we can scale that as a kind of tool  
28 for dealing with a lot of inconsistencies and lack of  
29 information and also incorporating some, at least from my  
30 perspective, I think -- That's what I bring to the table, is  
31 also a more kind of social aspect into that.

32  
33 Yes, oftentimes a lot of -- I think we're moving -- At least my  
34 perspective is that when we have societies in different  
35 communities, because of the volatility of the human judgment and  
36 the different dynamics, it's impossible to have one tool for  
37 everything. We have to have customizable tools available in  
38 different communities.

39  
40 You might have a framework or a protocol or methodology that  
41 will be in development, but the actual decision support tool  
42 might be different on different communities and so that's what I  
43 see in moving from a pilot and how we get that protocol and  
44 implement it on a different case study.

45  
46 **MIKE SISSEWINE:** Again, I see that in order for this SSC to  
47 recommend it, in the context of making it operational to help  
48 management, again separate from whether it ought to be funded



1 for research purposes, there has to be some sort of clear  
2 mapping of what the anticipated outcomes would be and how  
3 they're going to map into fulfilling National Standard 1  
4 Guidelines.

5  
6 That's under the most optimistic conditions that everything went  
7 well in the research and I can't personally envision how that  
8 outcome is going to occur that will satisfy the Guidelines.

9  
10 I can envision many sort of community-agreed actions that should  
11 be taken that would improve the quality of the fishery, reduce  
12 the risk socially and economically and ecologically, but when  
13 you read those Guidelines, they essentially ignore socially and  
14 economically and they have a very narrow criteria under which  
15 they judge ecological, essentially MSY.

16  
17 Unless either there's some expectation that given this sort of  
18 research outcome that someone is going to say, okay, these  
19 fisheries are exempted from National Standard 1 Guidelines  
20 because we have a better methodology, which may be true, but  
21 will it be legal? There's a difference between legality and  
22 truth.

23  
24 There may be a lot of expectations raised and a lot of effort  
25 with still the same dilemma, the National Standard 1 Guidelines  
26 that aren't particularly well suited to this information-poor  
27 situation.

28  
29 **KOSTAS ALEXANDRIDIS:** I think this is something -- As a  
30 scientist, I'm committed to the truth and my science and so I  
31 think the decisions and the policy implications are something  
32 that I think the council and the committee should assess, but I  
33 understand all those considerations.

34  
35 **TODD GEDAMKE:** I guess first of all, I think from early on in  
36 this, to see a formalized proposal and going through peer  
37 review, that's a necessity in this process. I think I kind of  
38 was like Miguel when he started. I think it's almost difficult  
39 to comment at this point, because there's a lot -- You touched  
40 on an immense amount of topics in there and so let me just list  
41 a couple off as you formalize it a little bit more.

42  
43 I think as a pilot study what you listed off in your  
44 presentation is extremely, extremely ambitious with two months  
45 of your time and a Masters student's time to touch on all the  
46 different steps you did.

47  
48 In the scoping, not only clarification specifics, but you

1 describe developing a non-linear machine learning algorithm and  
2 the PSA, a pattern recognition and neural network structure, and  
3 the third part is a hierarchal ranking system and the fourth is  
4 a Bayesian decision network diagnostic scheme.

5  
6 Each one of those could be a PhD student's work for a long  
7 period of time and so I think really hammering in the focus on  
8 some of those as to what will be done is kind of key. I think  
9 Mike touched on it before, but what exactly are you going to do  
10 and what are the products and how are they going to improve  
11 assessments and how will they tie to NS-1?

12  
13 For one part of this, the PSA component alone, NMFS pulled  
14 together a committee that spent close to a year-and-a-half  
15 pulling together just those PSA components and just those PSA  
16 criteria guiding them in that and so that can be very, very time  
17 consuming.

18  
19 I think part of the narrowing down of the focus too is really  
20 looking at -- For at least the PSA part, you don't need to  
21 reinvent the wheel on a lot of that and so if you could look at  
22 narrowing it down and really trying to figure out how it could  
23 tie into NS-1, it might be a little bit easier for us to  
24 evaluate.

25  
26 I guess in the end, I think that a formalized structure for us  
27 to review with more specifics as to actually which of these  
28 components that you put up there would be pursued and what maybe  
29 is the timeframe of some of those components and then we can  
30 take a closer look at it, but once again, the key is will those  
31 products be able to inform us in that NS-1 structure?

32  
33 **BARBARA KOJIS:** Maybe just a question to the whole group. Just  
34 from the comments, I have the feeling that people are thinking  
35 about this in terms of the whole fishery and Kostas was talking  
36 about focal sub-fisheries and had listed number one as the  
37 lobster fishery.

38  
39 When you're looking at just the lobster fishery, from trying to  
40 remember how ERAEF was organized, you're looking at just the  
41 species and habitats and so on that are within the lobster  
42 fishery, which is primarily spiny lobster, but it also includes  
43 some other species of fish that are caught incidentally and then  
44 it depends upon whether you say the spiny lobster fishery is  
45 everybody who is fishing for spiny lobster with the trap fishery  
46 and just the lobster traps and then when they go out and they  
47 use fish traps, are they part of that and so on? You have to  
48 kind of define what it is, but you could just say the fish trap

1 fishery.

2  
3 It's a much narrower focus and that means that even the PSA  
4 analysis, instead of being all the species, you're just talking  
5 about relatively few and then you're looking at the risk that  
6 lobster trap fisheries poses for these other species as well as  
7 for spiny lobster.

8  
9 The other aspect of it is the outcomes and what sort of  
10 operational outcomes are we getting from this and MSY and so on  
11 certainly would not -- I don't see how this would come up with  
12 MSY or any of these other aspects, but it could come up with  
13 mechanisms for successfully gathering data on the fishery, so  
14 that we get accurate data and we've got data that we can use for  
15 determining, over time, a more accurate MSY, OFL, et cetera.

16  
17 That may be an important part of it, by getting not only fishers  
18 committed to providing the information, but also getting a  
19 simpler and much less expensive mechanism for gathering the data  
20 that would fit with the size of the fishery.

21  
22 There may be other outcomes that will eventually get us to MSY,  
23 but in the interim, it improves the management levels and for  
24 the fishermen as well. The trap fishery does have a trap  
25 reduction committee and so they may also be -- When they come to  
26 the discussion of all of this, how to manage the trap fishery --  
27 Right now, anybody can get into the trap fishery who holds a  
28 license, currently.

29  
30 There's a lot of different aspects that might be included in  
31 this that we might want to say should be part of the proposal,  
32 so that this moves not only just in coming up with National  
33 Standard 1 things, but also management mechanisms.

34  
35 **MIKE SISSENWINE:** I can see a lot of very useful things that can  
36 come out of this, but again, they have -- Unless there's some  
37 basis under which the agency is able to hold harmless the  
38 council with respect to National Standard 1 Guidelines, which I  
39 can't imagine how and I wish they could, because I think that  
40 would be the right thing to do, but I can't imagine how.

41  
42 Whatever is done at the community level is still going to have  
43 to fit within the context of an overall ABC/ACL determination  
44 and so if there is -- With the ABC determination, which I guess  
45 we've already recommended for all of these stocks, if there's  
46 some sort of allocation of a -- If it's either done on the  
47 island platform basis or if it's an allocation to St. Thomas,  
48 for example, the community may recommend and the council may

1 agree that rather than handing out hard TACs in some way to  
2 individual fishers or to even for the island, they're going to  
3 put in place a bunch of other measures which are developed  
4 through such a proposal, such as trap reductions, closed areas,  
5 whatever they are.

6  
7 That may turn out to work effectively such that the ABC isn't  
8 exceeded and therefore, accountability measures are never  
9 invoked and all the good outcomes will occur, but still, that  
10 doesn't change the problem that right now this SSC has to  
11 recommend an ABC and the stakeholders are generally dissatisfied  
12 with the ABC we're recommending.

13  
14 I don't see that this sort of research project is going to  
15 change that situation. Within it, I see it can do a lot to  
16 harmonize community understanding and willingness to collect  
17 data, potentially to have some input controls at the community  
18 level that actually prevent them from having any problem dealing  
19 with the ACLs, but we still have to have some basis for coming  
20 up with the ACLs.

21  
22 **BARBARA KOJIS:** Coming up with the ACLs or improving the ACLs  
23 over time?

24  
25 **MIKE SISSENWINE:** If I could continue on this a little bit. If  
26 in fact the main desired outcome is better cooperation and data  
27 collection, then that's certainly a worthwhile long-term  
28 investment and it will be longer term. It's not going to solve  
29 this problem within the scope of a one to two-year project.

30  
31 That would be a very worthwhile project I think for a lot of the  
32 Caribbean, but this project as it's described is so much broader  
33 in scope that if I wanted to invest money in building community  
34 cooperation to improve data collection, I'm sure there's a more  
35 focused project to achieve that more narrow objective and I  
36 would want to design it taking advantage of the broad experience  
37 throughout the country of cooperative research projects that  
38 have been done everywhere in the country at costs of tens of  
39 millions of dollars.

40  
41 I wouldn't want to necessarily retool a procedure that's been  
42 designed for community buy-in to community-based management in  
43 Australia. We have tens of millions of dollars being spent in  
44 this country on cooperative research with the industry and if  
45 that's the main outcome, I would build on that activity and not  
46 this broader approach.

47  
48 **VANCE VINCENTE:** Just one last issue. If we remember back to

1 all the meetings that we've had for years and years, most of the  
2 questions and most of the hiccups in our process are due to  
3 social factors.

4  
5 Every time we try to explain the variance of the landings  
6 statistics, issues such as the cost of gasoline and that's what  
7 caused that dip there or unemployment or the IRS and the honesty  
8 in the reporting of the fishermen because of income tax issues  
9 and blah, blah, blah.

10  
11 Those things we know are important, but nobody has ever  
12 quantified them and I see this as a process that could help  
13 explain the variance in the numbers that we're dealing with  
14 every time that we meet and every time -- Most of the time, we  
15 wind up looking at social aspect issues and I think it's  
16 something very important, because as scientific termites,  
17 working and grinding at all these numbers here, we have not been  
18 getting very far.

19  
20 We need that kind of input. It doesn't have to be that model  
21 maybe and maybe it's a more simpler model or something like  
22 that, but definitely we need that kind of information for  
23 science to become better.

24  
25 **MIGUEL DEL POZO:** Just to add something is probably, with an  
26 approach like that, the standard error and the correction  
27 factors will drop dramatically, because in my experience, the  
28 lack of compliance with the reports and stuff like that is some  
29 sort of resistance, in a way, from the fishers side. Just  
30 adding to that, a true participatory approach would probably  
31 increase the scientific data.

32  
33 **KOSTAS ALEXANDRIDIS:** On the first comment that I wanted to give  
34 some of my ideas is the fact that indeed there is a number of  
35 analysis techniques, but oftentimes these types of complex  
36 systems require multi-tool and multi-model assessments.

37  
38 Most of those tools have already been developed and they've been  
39 applied. I have been working on different parts. We applied  
40 neural networks learning or Bayesian and I actually published a  
41 couple of years ago -- We did that with assessing recreational  
42 fishing attitudes at the Great Barrier Reef using Bayesian  
43 modeling.

44  
45 We have those tools developed and it's just we haven't put them  
46 all together to actually help us explain and so to reply to  
47 that, we won't have to develop all of the methodologies, but  
48 it's a just a way of applying them into a framework.

1  
2 The other thing is yes, I understand there is a legislative  
3 mandate that only includes ecological or even part of  
4 ecological, but there is also another mandate from the Ocean  
5 Policy Council that actually has been signed by President Obama  
6 a year ago that introduces the whole idea of resiliency at the  
7 community level.

8  
9 To that sense, I think the regional council, not as a federal  
10 agency, should consider at least even if not to be used for  
11 legislative mandates, at least give some consideration to things  
12 that could come from the bottom-up, from the community itself.

13  
14 As a scientist, I think that unless we balance the  
15 responsibility of the government and the regional management  
16 body with the aspirations of the community, there is no long-  
17 term possibility for success, but that's to be proven.

18  
19 **BARBARA KOJIS:** Any other questions or comments?

20  
21 **WALTER KEITHLY:** I've been, as most people know, rather quiet on  
22 this issue and it's actually a very interesting debate around  
23 the table and I agree with just about every comment that has  
24 been made.

25  
26 They tend to be in agreement with each other. I agree with the  
27 discussion from both Miguel and Mike that a proposal is  
28 warranted on a project this size. A proposal is definitely  
29 warranted on a research project of this nature and I agree with  
30 Todd that -- I'm an economist and I'm a social scientist and I'm  
31 thinking we can't even determine MSY at this stage.

32  
33 We don't have the data for that and yet, we see this grandiose  
34 project for \$115,000 with Bayesian analysis and neuro networking  
35 and everything else and while I understand the terms, I know  
36 very well it's not all going to get done for \$115,000 or  
37 whatever it was.

38  
39 It's way too complex, at least what's outlined there for the  
40 amount of money that's being requested and so, again, I will  
41 argue that this should be a -- If you would like a project like  
42 this to be funded at the amount of money you're asking, I think  
43 it's only fair that the SSC should ask you for a full-blown  
44 proposal on it.

45  
46 **BARBARA KOJIS:** To a certain extent, I think this is going to be  
47 required, and is that correct, by the council anyway, that this  
48 would be a -- A project would have to go out for bid and I

1 assume you have the funding available from some place and this  
2 would be a project that would go out for bid and that the SSC is  
3 really being asked if whether this would be a good idea and what  
4 would be at least some of the elements that should be in what  
5 somebody was asked to do for the proposal.

6  
7 **GRACIELA GARCIA-MOLINER:** I don't know exactly if the funding  
8 has been identified or if it's going out for bids or what the  
9 process in terms of the budget is.

10  
11 What the council needs from the SSC is to actually give it some  
12 guidance in terms of what social factors and what community  
13 information can be gathered through a process like this that can  
14 bring information back to the table in terms of considering the  
15 fishing community, considering the social aspects that deal with  
16 fisheries.

17  
18 We don't have any programs right now that look at the  
19 socioeconomic information that might or might not be available.  
20 In this case, it's not available, in most cases. That's the  
21 kind of guidance that the council is looking for.

22  
23 **BARBARA KOJIS:** The council is looking primarily for social  
24 aspects for fisheries and they're not looking at moving the  
25 process forward in terms of ACLs and so on except on a --  
26 They're trying to find out what the impact is of these on the  
27 community or --

28  
29 **GRACIELA GARCIA-MOLINER:** Why don't we do the following? Let me  
30 get Miguel on the phone, because we can call him from here and  
31 then he can explain. I was reading the minutes from the last  
32 council meeting and the request basically is to do that, to tell  
33 the council whether something like this would work with the  
34 changes that have taken place, because this is not the original  
35 bunch of information that went out to you.

36  
37 This is different from what had been presented at the Fisheries  
38 Forum and so if any of these items that are being considered,  
39 specifically looking at this pilot project for -- I think we had  
40 talked about specifically the lobster fishermen from St. Thomas,  
41 just that one section of the fishery, seeing what information  
42 could be gathered and brought back in terms of having it  
43 available and converting the anecdotal information into a  
44 scientific-based document that then you can use.

45  
46 It's not only the testimony of the fishermen of the council  
47 meetings that is cited all over the place, but it's actually  
48 that it's going to have a score and there's going to be a table

1 that is going to be the impact that it had on the fishery.

2  
3 At the same time that many other things are happening, like the  
4 trap reduction program and the escape vent project for the traps  
5 and the ghost trap removal from the Virgin Islands and the work  
6 that Tony is doing in St. Croix, and so all these things are  
7 happening and it's just one more piece of information to move  
8 into the process.

9  
10 I don't think that specifically the council was looking in terms  
11 of the ACL, but definitely it would help in the monitoring of  
12 the ACL if you are using the people who are doing the fishing to  
13 monitor the catch.

14  
15 **BARBARA KOJIS:** Why don't we take a break for about ten minutes  
16 and then come back?

17  
18 (Whereupon, a brief recess was taken.)

19  
20 **BARBARA KOJIS:** I would like to reconvene the meeting. We only  
21 have about twenty-five more minutes and I was just going to ask  
22 you, are you here overnight or are you just --

23  
24 **KOSTAS ALEXANDRIDIS:** Yes, I'm staying until tomorrow.

25  
26 **BARBARA KOJIS:** Okay, good. I talked to Miguel about what were  
27 the goals and objectives of this project and as he mentioned, we  
28 had already discussed and gotten input from a number of SSC  
29 members and mostly -- It wasn't discussed, I don't believe, at  
30 the SSC meeting, but it was discussed in emails that the general  
31 ERAEF -- That information that I sent out to you on the general  
32 ERAEF procedures, we had kind of moved on beyond that.

33  
34 The ERAEF itself did not have a socioeconomic component to it  
35 and the idea was that Kostas or somebody would develop that  
36 aspect of it with the participatory aspects of developing  
37 socioeconomic assessments or information.

38  
39 Miguel Rolon specifically said the council was interested in the  
40 socioeconomic impact of ACLs on the fishing community of St.  
41 Thomas and St. John and they focused on St. Thomas and St. John  
42 because the university is there and there's a masters' program  
43 at the university and the faculty are interested in these sorts  
44 of projects and the St. Thomas Fishermen's Association and St.  
45 Thomas fishermen are interested as well.

46  
47 The idea is to come up with something, a procedure or techniques  
48 or methodology, that can be used not only in St. Thomas and St.



1 John, but other places, St. Croix and Puerto Rico as well, to  
2 come up with the socioeconomic impacts of ACLs on fishing.

3  
4 We've been discussing this a little bit and since ACLs are not  
5 all in place and everything else, it's a little bit early to get  
6 that information. We could get information on what impact they  
7 have, but they do have impacts, even if it's psychological  
8 impact I guess at this stage, and there will be impacts within  
9 the next year and within the scope of this project.

10  
11 This is more of a socioeconomic emphasis than emphasizing  
12 anything -- Part of the reason for the interest in getting  
13 something like this is because of the lack of the socioeconomic  
14 data from the fishing communities within the U.S. Caribbean.

15  
16 I think to a certain extent that with all of this is what input  
17 would the SSC like to see with respect to what would they like  
18 to have as an outcome of a project like this and do they think  
19 that this is appropriate? Do they think this is an appropriate  
20 expenditure of funds, I guess, with respect to this? This may  
21 change the comments a little bit.

22  
23 **BILL ARNOLD:** Barbara, one thing that would concern me about  
24 this from a management point of view is -- I think there's a lot  
25 of really excellent aspects of this project, but we don't seem  
26 to be placing this within the context of a larger strategy for  
27 moving forward with Caribbean fisheries management.

28  
29 There's a lot of questions that we need to address and a lot of  
30 concerns that are on my mind. I think if we had a larger  
31 framework that we could say this fills this gap and then we need  
32 to do this over here to fill that gap, like monitoring ACLs, and  
33 we need to do this to fill this gap, which is adjusting ACLs  
34 based upon changes in fisheries and environment, et cetera, et  
35 cetera.

36  
37 The SSC and the council and the Science Center and the Regional  
38 Office probably should all be working together, and maybe other  
39 players as well, almost certainly other players as well, to  
40 develop a larger strategy within which we fit these pieces and  
41 this is one piece of a larger puzzle.

42  
43 **KOSTAS ALEXANDRIDIS:** I think one of the important aspects of  
44 this is it's not just technical, but also I think it might be  
45 useful for the council to actually have a functional and worked-  
46 out definition of a vision and strategy on where at least the  
47 community wants to go in the future.

48

1 We're talking about not just in the short term, but near and  
2 long term and so I believe it might be of use for the council to  
3 have at least an official worked-out indication of what the  
4 community wants into that process and contributing a strategy.

5  
6 **BILL ARNOLD:** I do want you to be aware, Kostas, that I think  
7 given our enforcement problems in the U.S. Caribbean that I  
8 personally feel that one of the primary solutions to that  
9 problem is community buy-in, because you're going to have to  
10 have enforcement and cooperation at the community level.

11  
12 We're never going to be able to spend enough money on  
13 enforcement officers to jam these fishermen into our concept of  
14 fisheries and so I think that is one of the aspects that has  
15 real value, which is why we need to get the communities involved  
16 in this.

17  
18 That's not the only thing we need to do, but I don't disagree  
19 that that's something we badly need to do. We don't need to --  
20 It's not an individual-based strategy, but it is a broad  
21 community-based strategy that includes St. Croix and Puerto Rico  
22 and I would have say one concern I have is not just for this  
23 project, but it seems like a lot of our emphasis is on St.  
24 Thomas and I would hate for the St. Croix and Puerto Rico folks  
25 to feel like they're kind of being left out or they're just an  
26 after-thought.

27  
28 **KOSTAS ALEXANDRIDIS:** Personally, I would love to include St.  
29 Croix and we have a relationship and we've been building  
30 relationships there and so the capacity is there.

31  
32 As a case study, we thought we should start with the easy part  
33 first, but I agree with you and I think enforcement is part of  
34 the strategy, but you cannot spearhead management just with  
35 enforcement.

36  
37 **BILL ARNOLD:** I think the term "enforcement" is probably, in the  
38 long run, not the term we're going to want to use, because you  
39 don't do community enforcement. You do community cooperation  
40 and you let peer pressure take care of the enforcement component  
41 and that might be a little bit pie-in-the-sky, but certainly  
42 having enough enforcement agents down there to make sure these  
43 laws stick is far more pie-in-the-sky than community  
44 cooperation.

45  
46 **KOSTAS ALEXANDRIDIS:** I think our work with UVI -- When I came  
47 to UVI two years ago, the fishing community with the scientists  
48 were a very bad relationship, because for a number of reasons,

1 but we have mended those and I think stewardship works and can  
2 work and it's a small enough system that we can get everybody in  
3 the same boat.

4  
5 It's just a question of putting the work and the effort required  
6 and some of them we don't understand and I think we need the  
7 management, but we also need the science and the research  
8 backing it up and that's where we can contribute, at least from  
9 the academic standpoint.

10  
11 **MIKE SISSEWINE:** I agree with everything that's been said about  
12 the utility and the opportunity, but, again, the feedback you  
13 just got was about the need for a social impact assessment and  
14 that's actually required under the Act and so forth and there's  
15 a fairly large effort within the agency to develop social impact  
16 assessments of all the management plans, which unfortunately  
17 haven't probably been done very significantly here, for a  
18 variety of reasons.

19  
20 If the question was review a study to judge it against its  
21 likely delivery of a social impact assessment, I would, again,  
22 have a much more focused and narrower study than what's been  
23 described here.

24  
25 A social impact assessment isn't building community buy-in or  
26 deriving the community's own solutions to the problems. It's  
27 about assessing the impact of ACLs in communities and describing  
28 their ethnicity and their educational levels and their income,  
29 all those sort of livelihood issues and predicting what impact a  
30 reduction in catch of X percent will have in terms of how they  
31 will respond.

32  
33 This study is much broader than that and it's not a bad thing,  
34 but, again, if the desire is to fulfill a specific need of a  
35 social and economic impact assessment, it's not this study and  
36 it's a different study that's much narrower.

37  
38 **BARBARA KOJIS:** Other comments?

39  
40 **KOSTAS ALEXANDRIDIS:** I have a comment about the funding level  
41 and why it was suggested at that level. First of all, some of  
42 the work we're doing is funded by the National Science  
43 Foundation and UVI and so a lot of my salary and the salary of  
44 staff is funded by that and the National Science Foundation and  
45 UVI is also funding some of the facilities and the development  
46 of tools and resources.

47  
48 All of those things are not included in the budget. There is a

1 level of co-funding into that and we also -- Some of the  
2 scientific tools and processes, we're doing that and we intend  
3 to request for external funding from scientific organizations  
4 and so that's why we're asking for a minimal amount that will  
5 fund certain aspects of the project, but I think I wanted to  
6 give you the bigger idea of what we were interested in doing.

7  
8 If you want to break it down into this component will be funded  
9 by this and this by the other, we can do that, but I think it's  
10 more useful for the SSC to see the big scientific value of those  
11 approaches.

12  
13 **JORGE GARCIA:** Just a question. Do you plan -- If you don't get  
14 a positive response from the council, would you go out to the  
15 open peer review process to submit a proposal like this and  
16 where?

17  
18 **KOSTAS ALEXANDRIDIS:** Yes, we might and part of this process is  
19 we already have parts of some of the methodology development,  
20 like the mental model representation. I'm already doing  
21 international research for climate change and understanding of  
22 community impacts.

23  
24 We already had a project funded by the National Science  
25 Foundation looking at ethnoecological dimensions of fisheries in  
26 St. Thomas and St. Croix. We are doing currently research on  
27 conservation areas that were developed and some of the  
28 resilience assessment tools and so we do and we will, but I  
29 think looking at the management perspective and getting  
30 everybody involved, including the council, it's a great  
31 opportunity.

32  
33 It's almost not that obvious and we all need funding to continue  
34 our assessments, but I think there is a value for enhancing that  
35 collaboration under any circumstances. At least our engagement  
36 with the community is continuous and we have a memorandum of  
37 understanding building up to the process and UVI is about to  
38 establish a long-term collaboration with the fishing community,  
39 at least in the Virgin Islands.

40  
41 **JORGE GARCIA:** Barbara, I think that my initial comment, when we  
42 received this suggestion for comments on this, but I can see  
43 almost a pre-proposal -- It's that we would like to have the  
44 proposal, to see everything in more detail and perhaps that is  
45 something that we could not do without.

46  
47 The next question would probably be if there would be some panel  
48 of peer review that should take a look at this proposal before

1 us, people that are actually doing this in more depth than this  
2 council would be, so that we can have then the reviewers'  
3 perspective on whether this is something that is feasible or  
4 not.

5  
6 From that standpoint, I think that our position in the process  
7 should not be of us being the peer reviewers of the proposal,  
8 but rather then receiving those reviews and then giving our  
9 opinion based on that review.

10  
11 **KOSTAS ALEXANDRIDIS:** I think that's what I would like to see  
12 and I came here with the understanding that I would give a  
13 presentation and without having a process to which we commit,  
14 it's quite a lot of work to have a full proposal and so we need  
15 to have a framework defined by the council or the SSC to which  
16 we can submit, but it has to have deadlines and the ability to  
17 know that after we go through that process there's going to be a  
18 decision whether or not to fund this study. Yes, I would like  
19 to see that.

20  
21 **BARBARA KOJIS:** I believe it would be appropriate for the SSC,  
22 first of all, to decide whether some sort of study like this  
23 should go forward and then what the framework should be for it,  
24 because it sounds like even if we did a socioeconomic assessment  
25 under the funding that the council may have or what have you  
26 that would fit in with the requirements of the Magnuson-Stevens  
27 Act, the other aspects of this that he mentioned could be funded  
28 elsewhere, so that this would be just fitting into one  
29 component.

30  
31 We would be funding one component of this and this would be the  
32 component that -- We should have some criteria that we would  
33 like to suggest that the council include in a funding proposal.

34  
35 First, we need to decide whether we think a socioeconomic  
36 assessment would be a good thing to have done or whatever  
37 socioeconomic component we think should be put forward as  
38 something we support.

39  
40 **VANCE VINCENTE:** Another possible funding source is the Sea  
41 Grant Program. They're normally interested in such types of a  
42 study and I don't know whether you have explored that venue.

43  
44 **KOSTAS ALEXANDRIDIS:** Yes and we have a Marine Advisory Council  
45 at UVI that is funded by Sea Grant and there was some confusion  
46 in the last round, because of co-investment issues with the UVI.  
47 We just solved those issues, because they would not waive, as  
48 the rest of the funding agencies, the co-investment -- The

1 matching funds. That is resolved. The Sea Grant would fund the  
2 engagement on the -- Yes, some part of it, including the  
3 community development potential and the engagement, could be  
4 funded by Sea Grant.

5  
6 **MIKE SISSENWINE:** In response to your specific question, a study  
7 that would provide a better basis for socioeconomic impact  
8 assessment is needed and so if there is a way in which this  
9 study can have as its focus delivering those needs, that  
10 certainly has merit.

11  
12 **KOSTAS ALEXANDRIDIS:** From my perspective and what I came to  
13 present here, it's slightly different, but at least my team  
14 would not be interested in a socioeconomic impact assessment, at  
15 least the traditional way. We won't be submitting any proposals  
16 for that.

17  
18 **MIKE SISSENWINE:** I wasn't necessarily suggesting that the team,  
19 your team, do an impact assessment. That, in my view, is the  
20 agency's responsibility, but delivering scientific information  
21 that would advance the ability for those to be done is certainly  
22 needed and so that might be a fine distinction, but it is a  
23 distinction.

24  
25 **BARBARA KOJIS:** Any other comments? It's almost five o'clock  
26 and my suggestion is everybody think on this tonight and we can  
27 continue this discussion tomorrow and mull it over at that time.  
28 Does anybody have anything before we kind of sign off on this  
29 meeting? No?

30  
31 **VANCE VINCENTE:** I want to thank Dr. Kostas for his  
32 presentation.

33  
34 **BARBARA KOJIS:** He will be here tomorrow, but yes, thank you for  
35 your presentation very much. He'll be here tomorrow to answer  
36 more questions if we have them and discuss this further and help  
37 fill us in on things. Thank you.

38  
39 (Whereupon, the meeting recessed on November 15, 2011.)

40  
41 - - -

42  
43 November 16, 2011

44  
45 WEDNESDAY MORNING SESSION

46  
47 - - -

48

1 The Scientific and Statistical Committee of the Caribbean  
2 Fishery Management Council reconvened at the Embassy Suites  
3 Hotel, San Juan, Puerto Rico, Wednesday morning, November 16,  
4 2011, and was called to order at 9:25 o'clock a.m. by Chairman  
5 Barbara Kojis.

6  
7 **BARBARA KOJIS:** Good morning, everybody. This is the 16<sup>th</sup> of  
8 November at 9:25 a.m. We're starting the SSC meeting and it's  
9 the second day of the SSC meeting and I would like to begin by  
10 just going around the table and have everybody stating their  
11 names. Walter, could you start, please?

12  
13 **WALTER KEITHLY:** Walter Keithly, LSU.

14  
15 **MIKE SISSENWINE:** Mike Sissenwine, Woods Hole Oceanographic  
16 Institution.

17  
18 **TODD GEDAMKE:** Todd Gedamke, Southeast Fisheries Science Center.

19  
20 **VANCE VINCENTE:** Vance Vincente.

21  
22 **KOSTAS ALEXANDRIDIS:** Kostas Alexandridis, University of the  
23 Virgin Islands.

24  
25 **BARBARA KOJIS:** Barbara Kojis, SSC Chair.

26  
27 **JORGE GARCIA:** Reni Garcia, UPR Mayaguez.

28  
29 **MIGUEL DEL POZO:** Miguel Del Pozo.

30  
31 **BILL ARNOLD:** Bill Arnold, Southeast Regional Office.

32  
33 **CARLOS FARCHETTE:** Carlos Farchette, Caribbean Council Chair.

34  
35 **IRIS OLIVERAS:** Iris Oliveras, council staff.

36  
37 **GRACIELA GARCIA-MOLINER:** Graciela Garcia-Moliner, council  
38 staff.

39  
40 **DISCUSSION OF SSC RECOMMENDATIONS**

41  
42 **BARBARA KOJIS:** Thank you, everybody, for coming again and we  
43 have on the screen a summary of the previous day's discussion on  
44 OFL and ABC and whether we could or should eliminate OFL and  
45 just include ABC and we also have the spiny lobster discussion  
46 that we had.

47  
48 What I would like to do is review these summaries of our

1 discussion and have any comments and then come to a consensus on  
2 the final documents or final presentations for the council. Any  
3 discussion about the first part or any corrections? It can even  
4 be just typographical errors, but discussion of the legal  
5 responsibility of the SSC for providing OFL and ABC  
6 recommendations?

7  
8 Do I need to give everybody more time to just go through this?  
9 Okay. Why don't we just -- Everybody read it again. I think  
10 they probably read it once previously, but read it again and if  
11 you have any comments after you've read it, raise your hand or  
12 whatever.

13  
14 **BILL ARNOLD:** I have a question about the paragraph at the very  
15 top of page. I remember Mara saying this, that if you did  
16 decide to change the approach, that would require withdrawing  
17 previous --

18  
19 We also talked about how a national get-together needs to be  
20 convened to figure out how to obtain consistency among the  
21 councils and so I'm just wondering if changes were made and they  
22 said we're going to do things this way, then that would be a  
23 change going forward and would that affect everything we've done  
24 in the past or we would just say we've had a consensus and we've  
25 changed the way we do things and we don't have to withdraw  
26 previous estimates, but we just move forward making new  
27 estimates, based upon a different methodology?

28  
29 **TODD GEDAMKE:** What I got out of the conversation yesterday was  
30 using the word "withdraw", which would require us to justify  
31 changing those estimates, but I also agree with your statement  
32 that if we were looking at this amendment and moving forward to  
33 the future that we could potentially develop and justify new  
34 methodology, but I think the gist of the conversation was to  
35 withdraw our previous estimates and to provide rationale and  
36 provide new estimates.

37  
38 I think that summarizes, more or less, what was discussed, but I  
39 agree with you that in the future we could come up with another  
40 set of methodology that is justifiable and move forward from  
41 there.

42  
43 **MIKE SISSENWINE:** I also agree that if there's a change in  
44 methodology that that's what the future will look like, but it's  
45 hard to envision a change in methodology that would broadly  
46 argue that you shouldn't estimate OFL without a whole revamping  
47 of the National Standard Guidelines, which have the famous  
48 diagram that builds everything off of OFL.



1  
2 **VANCE VINCENTE:** You think a different methodology, like the two  
3 standard deviation approach -- How different would the results  
4 be? Has anybody done that exercise using the three  
5 methodologies and then compare and see whether there is a  
6 significant difference in the OFL estimates?

7  
8 **TODD GEDAMKE:** I'll just speak to that briefly. I think Bill  
9 calculated this at some point in time for discussion, but if you  
10 think about looking at comparisons of values of OFL set equal to  
11 average landings versus those that are set at two standard  
12 deviations, the more highly variable your catch series is, the  
13 larger your OFL is going to be and I think that's the logical  
14 inconsistency, that we stopped those calculations and are moving  
15 forward with that.

16  
17 **BILL ARNOLD:** Just in a more general sense, from the point of  
18 view of all of the SSCs, and I don't need an answer to this, but  
19 I just wanted to let you know what I was thinking, but it  
20 wouldn't necessarily be that we have to come around to the  
21 Gulf's point of view, but the Gulf might come around to our  
22 point of view, in which case they would be changing things going  
23 forward and that could cause some tension with their fishermen,  
24 et cetera, et cetera.

25  
26 I was just looking at it from a broader sense and not just from  
27 us having to fall in line with them and as far as the standard  
28 deviation thing is concerned, Todd, when you start multiplying  
29 these already very large standard deviations by two in the  
30 Caribbean, you're going to get OFLs that would basically prevent  
31 anything from ever happening, because it would be double or  
32 triple what the average catch has been.

33  
34 **BARBARA KOJIS:** Are there any specific changes to this section  
35 of the presentation for the council? Anything that needs  
36 clarification or --

37  
38 **TODD GEDAMKE:** It is stated in the sentence at the bottom of  
39 page, "however the review workshop", but I think for  
40 clarification purposes that in the first sentence "the SEDAR  
41 2005 working document" or something along those lines and maybe  
42 "it was noted that the 2005 assessment working document  
43 concluded the fishing mortality was below" rather than the  
44 definitive "2005 assessment".

45  
46 After "2005 assessment", just put "working document" to make it  
47 "It was noted that the 2005 assessment working document  
48 concluded that fishing mortality was below the overfishing

1 threshold. However, the review workshop for the 2005 SEDAR  
2 assessment concluded the assessment was unreliable and a status  
3 determination cannot be made."  
4  
5 **BARBARA KOJIS:** Any other changes that need to be made? I'll  
6 give you a couple more minutes.  
7  
8 **TODD GEDAMKE:** I was just looking at the length frequency  
9 summary, because the length frequency in Puerto Rico and St.  
10 Croix was relatively stable and the second sentence of "The SSC  
11 also reviewed length frequency data from the fishery and the  
12 data showed a rapid decline with size and implicitly with age"  
13 and I think that sentence is just a little strong.  
14  
15 **BARBARA KOJIS:** There were two aspects to this and, Mike, you  
16 will probably address it.  
17  
18 **MIKE SISSENWINE:** You're correct that it was stable over time,  
19 but overall, it showed a rapid decline with size and implicitly  
20 with age and so I think that statement -- We could add "although  
21 the length frequencies were stable over time", to make it  
22 clearer.  
23  
24 **TODD GEDAMKE:** I think that would be perfect. I think,  
25 Graciela, just in the second sentence and say -- Put it right at  
26 the beginning and say "although the size structure was  
27 relatively stable over time".  
28  
29 **MIKE SISSENWINE:** To be consistent, the phrase I've used is  
30 "length frequency" and so we ought to either use "size  
31 structure" or "length frequency" and so to be consistent, I  
32 would say "although the length frequency is relatively stable".  
33  
34 **JORGE GARCIA:** The question is, would that apply for Puerto  
35 Rico, St. Thomas, St. Croix as well?  
36  
37 **TODD GEDAMKE:** For Puerto Rico and St. Croix, absolutely yes and  
38 the word "relatively", there was a slight indication of decline  
39 in St. Thomas/St. John and I think "relatively" covers us and so  
40 that statement is accurate, I believe.  
41  
42 **JORGE GARCIA:** I am asking because there is no language on  
43 islands there and so it applies to everyone, to all.  
44  
45 **BARBARA KOJIS:** Because I don't think people are going to  
46 understand that when you're looking at the section of "data  
47 showed a rapid decline with size and implicitly with age" that  
48 you're referring to the annual size structure and just the

1 weight or the size structure in terms of the decline --  
2  
3 **TODD GEDAMKE:** If you wanted to clarify that, we could say  
4 "although length frequency structure is relatively stable over  
5 time, data showed" -- I just lost my thought.  
6  
7 **BARBARA KOJIS:** We could make it a separate sentence and say  
8 "Data showed a rapid decline with size and implicitly with age  
9 and large individuals were" -- Add that as a second thing,  
10 because I don't think people are going to pick up that you're  
11 talking about that you're comparing over time and one is just  
12 looking at the size structure period and seeing a rapid decline  
13 in the size structure from one group of data to the next or one  
14 --  
15  
16 **MIKE SISSENWINE:** Could I suggest that the sentence that we were  
17 just discussing stays the way it is, but the one where your  
18 cursor is now, "The SSC did not formally analyze the data, but  
19 the relatively low abundance of large individuals is suggestive"  
20 and so we get it in there?  
21  
22 **BARBARA KOJIS:** Todd, would it be helpful to just have two  
23 graphs inserted into this, one showing something about the  
24 change in length frequency over time and the other showing this  
25 rapid decline, so it's clear what we're talking about?  
26  
27 **TODD GEDAMKE:** I'll leave that decision to you. I think that  
28 summarizes it and it may -- I don't think it's necessary, but we  
29 can include it if you would like.  
30  
31 **BARBARA KOJIS:** I'll look at that and we could even cite the  
32 table or the graph or graphs. Any other comments?  
33  
34 **VANCE VINCENTE:** I have the size frequency diagrams with me and  
35 we can even be more significant and a lobster carapace length  
36 larger than 130 are very, very rare and occur in very low  
37 frequency. These are the graphs of Daniel Matos and so it's  
38 very clear from 130 on. We could apply also that to St. Croix.  
39  
40 **BARBARA KOJIS:** Comments on that recommendation?  
41  
42 **MIKE SISSENWINE:** I'm a little worried about being very  
43 specific, since this is a very superficial conclusion. When you  
44 start to put in more data and numbers and so forth, it gives the  
45 impression that it's based on more than simply just looking at  
46 graphs that were up there.  
47  
48 The other concern is that during the discussion where Matos had

1 presented his stuff, Todd pointed out that there are actually a  
2 bunch of big individuals which weren't reported in his document,  
3 which raises some questions about what's going on with the data  
4 and so I would hate to make that statement and then have the  
5 focal point of the argument be well, what about these thirty  
6 lobsters that weren't reflected there and just get the whole  
7 thing diverted from the big picture.

8  
9 **MIGUEL DEL POZO:** About that data, regarding the larger  
10 individuals, it wasn't clear to me if they were deleted from the  
11 data, because from what Daniel said, apparently it was deleted  
12 believing it was a data entry issue, but then after the  
13 discussion, it seems like individuals with 300 millimeters are  
14 possible and so I'm not sure if those individuals were deleted  
15 or they are present in the data and I guess it makes a big  
16 difference, after what you guys have been saying. What is the  
17 status at the moment of those unsure landings?

18  
19 **TODD GEDAMKE:** I think what we're just about to get into with  
20 this is exactly what Mike is sort of touching on as to get  
21 diverted into the details of the data and I think are we in  
22 agreement -- I'll respond to your question. Are we in agreement  
23 with that paragraph and the statements in there? I think let's  
24 make sure we've got that.

25  
26 I will just respond and that is that I -- It's my understanding  
27 that Daniel, in consulting with some of the other port agents,  
28 felt that individuals over a certain size, which he was non-  
29 specific about, were removed from the dataset.

30  
31 I have those thirty individuals or 200 individuals above 200 in  
32 the database, but that's 200 of 40,000 individuals and so they  
33 are in there and I don't think that changes at all our picture  
34 or interpretation of what we've been looking at.

35  
36 **BARBARA KOJIS:** Any other changes or corrections on this?

37  
38 **JORGE GARCIA:** Up to that paragraph?

39  
40 **BARBARA KOJIS:** Yes, up to that paragraph, if there's no change.

41  
42 **WALTER KEITHLY:** I'm just wondering on the top paragraph if it  
43 may be useful to mention that that 1971 data came from a  
44 fishery-independent survey and therefore you're skewed to the  
45 left in terms of small individuals, which may contribute to on  
46 the surface appearing as though the average size may not have  
47 declined.

48

1 **BARBARA KOJIS:** Graciela, could you type that in, please?  
2 Walter, if you could just help her?  
3  
4 **WALTER KEITHLY:** Maybe at the very end of the paragraph, just  
5 say -- Go ahead, Mike. I'll let you do it.  
6  
7 **MIKE SISSENWINE:** The SSC also noted that the 1971 length  
8 frequency data was from a fishery-independent survey, which  
9 might tend to obscure a decline in size when compared to  
10 commercial length frequency data from 2006. Is that accurate?  
11  
12 **WALTER KEITHLY:** Yes, where you have minimum size restrictions.  
13  
14 **BARBARA KOJIS:** I think there needs to be some mention about the  
15 fact that the fishery-independent survey was a full range of  
16 sizes or something included.  
17  
18 **WALTER KEITHLY:** How about this, "compared to the commercial  
19 length frequency data from 2006, where there is a minimum size  
20 requirement at harvest" and I think that will strengthen it.  
21  
22 **BARBARA KOJIS:** Any other comments on this? If not, could you  
23 scroll down some more, Graciela?  
24  
25 **MIKE SISSENWINE:** I want to comment on that statement that  
26 there's no scientific basis for this assumption that the stock  
27 is healthy could lead to all sorts of ramifications. If I'm  
28 sitting there in the Regional Office, I might be inclined to  
29 start challenging the determination if there's no scientific  
30 basis for it.  
31  
32 I don't know of any scientific basis and so as far as I am  
33 concerned, the statement is true, but we ought to be aware that  
34 it could have ramifications, in particular when we find that the  
35 SEDAR working paper was not sustained by the review process.  
36  
37 **WALTER KEITHLY:** If they want to challenge it at some point, so  
38 be it.  
39  
40 **MIKE SISSENWINE:** I think it's factual and I think being  
41 transparent and honest, that's what you have to say, but it's  
42 not going to make life easy.  
43  
44 **BARBARA KOJIS:** Could you just scroll down, Graciela, please?  
45  
46 **TODD GEDAMKE:** Can you go to the paragraph before on the screen?  
47 I just was in the middle of that. No, that's good. Thank you.  
48

1 **MIKE SISSENWINE:** It might simply be reworded that "For GMFMC,  
2 estimates ABC based on average catch plus a multiplier of  
3 standard deviation (e.g., two times the standard deviation)".  
4 You're changing Number 2 after the "SSC" to "estimates ABC based  
5 on average catch plus a multiplier of standard deviation" and  
6 then delete that part, but let's insert, in parentheses, "e.g.,  
7 two times the standard deviation" and then end the parentheses.  
8

9 **VANCE VINCENTE:** What was the basis of the Gulf Fishery  
10 Management Council to add that multiplier of the standard  
11 deviation? Mike, do you know?  
12

13 **MIKE SISSENWINE:** I have no idea. I sort of vaguely remember  
14 the arguments where they said that if you did that that you  
15 would only end up in overfishing 2.5 percent of the time, but  
16 that's just sort of trivial statistics, assuming normality. I  
17 don't know what other basis there was.  
18

19 **BARBARA KOJIS:** Bill Arnold, do you recall why the Gulf Council  
20 was able to choose two standard deviations above the average  
21 catch to determine OFL?  
22

23 **BILL ARNOLD:** I do not, Barbara. I don't have a lot of  
24 familiarity with that methodology and I just kind of felt like  
25 it's not going to work real well in the Caribbean, given our  
26 standard deviations.  
27

28 **JORGE GARCIA:** Just to be sure, what this results in is an ABC  
29 which is much higher than the average catch. Is that right or  
30 am I wrong? How it reads, it says the average catch, which is  
31 OFL, I guess, plus a multiplier of standard deviation, which  
32 might be an integer, a whole number, and if you sum any kind of  
33 multiplication of an integer over the average catch, it results  
34 in a number which is higher than ABC. It doesn't say plus or  
35 minus.  
36

37 **BARBARA KOJIS:** Isn't that actually OFL though? It should be  
38 estimates OFL based on average catch and the ABC was the -- It  
39 was the ABC?  
40

41 **WALTER KEITHLY:** It's strictly a plus, first of all, and it's  
42 not necessarily two. As you come down to Tier 3 on the --  
43

44 **JORGE GARCIA:** You would come to a huge number.  
45

46 **WALTER KEITHLY:** Basically, it's a multiplier and as I recall  
47 it, depending on the life span of the fishery and the natural  
48 mortality and so forth. The purpose is simply that in the Gulf

1 they did not feel that many of these fisheries, even data-poor  
2 fisheries, were to be considered overfished and it would give  
3 some room for expansion on them.

4  
5 **BILL ARNOLD:** My understanding, and it may not be correct, but  
6 my understanding was they set the ABC at the average catch and  
7 then they wanted to get the OFL above the average catch. This  
8 is what Roy was trying to get us to do down here.

9  
10 They set the OFL as 0.5 or 1 or 2 or whatever the multipliers  
11 are. They have at least three multiplier options and they use  
12 that multiplier of the standard deviation to set the OFL above  
13 the ABC, so that you can then fish at your average catch,  
14 because you set your ABC and your ACL equal, without much threat  
15 of exceeding your OFL and bringing down the doom of Magnuson-  
16 Stevens.

17  
18 **TODD GEDAMKE:** Help me out with language, but I think what we're  
19 getting at is estimates ABC based on average catch and OFL based  
20 on the ABC times a multiplier of standard deviation.

21  
22 **BARBARA KOJIS:** That's right. That's what I would assume.  
23 Thanks for picking that up, Reni.

24  
25 **VANCE VINCENTE:** My question remains and I think the same way  
26 that we justified using the median for Puerto Rico and there was  
27 a wide range of catch values and we justified the median, but  
28 I'm saying what was the basis of selecting the standard  
29 deviation and not other indexes of dispersion, such as the  
30 standard error or even the variance, which makes more sense to  
31 me? I don't know, but just throwing in a standard deviation  
32 without justifying it is just -- For me, it's capricious, maybe.

33  
34 **BILL ARNOLD:** In defense of the Gulf Council and my good friends  
35 in the Southeast Regional Office, they have a lengthy  
36 documentation of this that surrounds it that we don't have in  
37 front of us and so it's not like they just threw darts at the  
38 wall.

39  
40 There was some thought put into this. There really was and I  
41 think we should keep that in mind, but it's just that we don't  
42 have that in front of us and that's all and we could spend a lot  
43 of time that I don't think we want to spend going into this.

44  
45 **BARBARA KOJIS:** That document would have that justification is  
46 available at the GMFMC website, I would assume.

47  
48 **BILL ARNOLD:** Barbara, I'm sure it's out there somewhere and I

1 don't know exactly where, but we would have no trouble tracking  
2 it down and in fact, I thought we probably had it up on the  
3 screen at the council meeting or something and so that's a  
4 readily available document.

5  
6 **MIKE SISSEWINE:** My comment on this next paragraph is purely  
7 that I think it's just clumsy, because it's got redundancy in  
8 it. It says "It has also been pointed out that estimating OFL  
9 based on average catch during a period when stocks were not  
10 being overfished implies that annual catches that frequently  
11 occurred in the past" and I would delete "presumably during a  
12 period when overfishing was not occurring" because that's just  
13 redundant. Then it continues "will be deemed as overfishing in  
14 the future".

15  
16 **JORGE GARCIA:** I am going to open it up here. If we're saying  
17 that the Caribbean Fishery Management Council estimates OFL  
18 based on average or median catch and in most cases, estimates of  
19 ABC equals OFL, for stocks that are not overfished or for which  
20 overfishing is not occurring, then why are we recommending  
21 reductions in the annual catch for queen snapper if that is not  
22 being overfished? Why? Tell me really why.

23  
24 **TODD GEDAMKE:** We just had this discussion three weeks ago at  
25 the SEDAR meeting. As part of the 2010 Amendment, snappers were  
26 designated as undergoing overfishing and therefore, they fell  
27 into that category.

28  
29 Our experience a month ago, at the most recent assessment, is  
30 not related to any of those decisions or discussions that were  
31 part of the 2010 Amendment and so the information is developing.  
32 We are getting new information and we are conducting new  
33 analyses and this process is the 2010 Amendment and the  
34 discussions and our decisions for that are distinct and  
35 different from that analyses that are being conducted currently.

36  
37 Looking at OFL equals ABC for these, that was a recommendation  
38 and the council then reduced down to the ACL and so it's a  
39 separate issue.

40  
41 **BARBARA KOJIS:** There are framework measures once the 2010  
42 Amendment is in place. There are framework measures for  
43 modifying all of these parameters based on new information  
44 that's available and so the council will be able to go back or  
45 the SSC go back and look at what has been done and make  
46 different recommendations.

47  
48 It doesn't mean that things will happen quickly, but it will



1 happen much more quickly than having to do a new amendment. Do  
2 you want to add anything to that, Todd?  
3  
4 **TODD GEDAMKE:** I think you summarized that perfectly. That's  
5 part of the way the framework was set up and the Regional Office  
6 has set the document up so that with new information that  
7 changes can be made.  
8  
9 **BARBARA KOJIS:** Mike, are the modifications that you recommended  
10 up there?  
11  
12 **MIKE SISSENWINE:** I guess I was suggesting removing "presumably  
13 during a period when overfishing was not occurring" and that's  
14 unnecessary and redundant. We can just delete that.  
15  
16 **BARBARA KOJIS:** The first line of the next paragraph, should  
17 that be "however, it cannot resolve inconsistencies between  
18 SSCs"? Okay. Then the "existed", that should be "exist"  
19 between -- It should be "that exist throughout the country. The  
20 SSC notes that inconsistencies between approaches exist  
21 throughout the country" and not the past tense.  
22  
23 **TODD GEDAMKE:** Also, just close the parentheses at the end of  
24 the sentence.  
25  
26 **BARBARA KOJIS:** The second to last sentence, "this meeting has  
27 not been effective to address" --  
28  
29 **TODD GEDAMKE:** I think just change it to "effectively" and say  
30 "however, these meetings have not effectively addressed the  
31 legitimate concerns raised above".  
32  
33 **MIKE SISSENWINE:** It is my opinion, but it's a fairly strong  
34 thing for the SSC to agree to. I think you had better really  
35 decide whether you agree with it or not and if people have  
36 reservations, then delete it.  
37  
38 **BILL ARNOLD:** Or say it is the opinion of some members of the  
39 SSC.  
40  
41 **BARBARA KOJIS:** Any other comments about that? Okay. Any final  
42 comments about this document?  
43  
44 **WALTER KEITHLY:** Very good job.  
45  
46 **BARBARA KOJIS:** I would concur with that. Excellent job and I  
47 really appreciate his efforts on that.  
48

1 **JORGE GARCIA:** I have a comment and the comment is that I see  
2 that whereas the Gulf Council does provide a window for  
3 expansion of its healthy fisheries, we do not.

4  
5 **BARBARA KOJIS:** From my perspective, because we're -- I would  
6 suspect if we look at, and I don't sort of want to make this  
7 comment, but I suspect if we look at a lot of the fisheries that  
8 they're talking about, they're not targeted at all or they're  
9 just a little bit of bycatch.

10  
11 You would have to go look at how those fisheries compare with  
12 ours, because we said -- Certain fisheries in Puerto Rico and  
13 the Virgin Islands, it's very different, but such as surgeonfish  
14 and so on are not overfished, but in the Virgin Islands, for  
15 example, surgeonfish are targeted. It's not a bycatch  
16 situation.

17  
18 In Puerto Rico, it is and we actually increased, I think, the  
19 ACL and ABC level -- ABC and OFL well above what the catch rates  
20 were of Puerto Rican fishermen based on what the recreational  
21 catches were, so that there's an opportunity for that fishery to  
22 develop if Puerto Rican fishermen want to.

23  
24 I suspect that with the Gulf Council that a number of these  
25 fishery species where they have two standard deviations above  
26 may fall under the Puerto Rican situation with surgeonfish,  
27 where there's only a small catch of these things and you could  
28 actually increase the catch rate, but we would really have to  
29 look at the document to see that, whether that's what the  
30 situation is.

31  
32 **WALTER KEITHLY:** Again, they set the ABC at the average catch  
33 and the OFL was adjusted by some factor and increased. By the  
34 factor that set ABC at that level, it implies that they do not  
35 want the fishery to increase.

36  
37 In fact, when the council comes in and adjusts it downwards even  
38 for the ACL, it will be lower than the ABC. Without additional  
39 information of what the SSC is allowing for the catch, it's not  
40 going to increase.

41  
42 The other point I would just make is that while I was not at the  
43 last SSC meeting, I was listening to it and there was quite a  
44 bit of discussion in the room at the time that all of the  
45 fisheries in the Caribbean are heavily fished and that there was  
46 probably little room for expansion.

47  
48 In fact, I have much of the documentation, because I asked for

1 all the previous recordings of the SSC meetings and there was  
2 considerable discussion that most of these fisheries should not  
3 be increased in terms of catch and so, again, that discussion  
4 did occur at the meeting.

5  
6 **JORGE GARCIA:** Are the sea cucumbers overfished?

7  
8 **WALTER KEITHLY:** Are the sea cucumbers in a fishery management  
9 plan?

10  
11 **JORGE GARCIA:** I don't know, but they're being fished right now.

12  
13 **WALTER KEITHLY:** I don't know if they are.

14  
15 **JORGE GARCIA:** It's just an example. There are species that  
16 might come up in the future that I am not referring to any  
17 particular case, but I'm just referring to the general concept  
18 that following this -- If we establish that our ABC is going to  
19 be equal to OFL, that opposes any possibility of expansion of  
20 any fisheries whatsoever.

21  
22 In the case of species like, for example, like the queen  
23 snapper, there's some other considerations, which I have said  
24 before in the record. We are not considering the habitat range  
25 of the species. We cannot show that the species is  
26 overexploited and that it's not overfished.

27  
28 It is a relatively new fishery and in that case, by setting ABC  
29 equal to OFL, we do not provide any possibility for expansion of  
30 the fishery and that is my point, where I see that other  
31 councils do have a possibility of expansion and we do not.

32  
33 **BARBARA KOJIS:** As I mentioned before, there's framework  
34 measures and that allows, when new data comes forward, for us to  
35 change what the ABC and OFL is and so it doesn't prohibit  
36 expansion of the fisheries. It's just that you need new data  
37 and new information available in order to make those framework  
38 changes.

39  
40 Even with an OFL two standard deviations above the ABC, you  
41 still have to go back and do a framework change in the Gulf in  
42 order to increase the ABC above the average catch and in our  
43 particular case, we would have to change both OFL and ABC in  
44 order to do that, but based on new information that gives us a  
45 better idea of what the status of the stock is, because our  
46 problem is that we do not know really what the status of these  
47 stocks are and so we're using average catch or median catch as  
48 an MSY proxy.

1  
2 **JORGE GARCIA:** And the Gulf is not?  
3  
4 **BARBARA KOJIS:** I don't know what the Gulf is doing, but I  
5 assume that the Gulf is doing two standard deviations for some  
6 of the species as the MSY proxy, but they must have a rationale  
7 and I think in order to discuss that that we would really have  
8 to bring up the document of what their rationale is and I don't  
9 think we've got that time right now to do that, but we could  
10 certainly do that at another meeting and make sure that that's  
11 available.  
12  
13 **JORGE GARCIA:** I'm just trying to provide some discussion on the  
14 comments of the council that we comment on these discrepancies  
15 between the councils in terms of the way we are looking at these  
16 things and I do see some large differences, big differences, in  
17 the approaches.  
18  
19 **MIKE SISSEWINE:** The document we just reviewed says there are  
20 large differences and we concur with the concern that's  
21 expressed, by Roy in particular, at the previous meeting. He's  
22 expressing, accurately, legitimate concerns.  
23  
24 We're simply saying we can't sit here in this meeting alone and  
25 solve the problem, but we're not disagreeing with your point of  
26 view or with Roy's point of view that there are discrepancies  
27 and they need to be addressed.  
28  
29 **BARBARA KOJIS:** Could I just ask if there's any other comments  
30 on this document or any other changes that we need to make? If  
31 not, is this a consensus and does everybody agree that this is  
32 the document that we should go forward with on the topics that  
33 we've discussed to date? Okay. Great.  
34  
35 So this is approved then by the SSC as it stands and thank you,  
36 Graciela, for making those changes and thanks again to Mike  
37 Sissenwine for typing this up and doing such a good job with it.  
38  
39 The next topic we would like to get to is then the socioeconomic  
40 aspects and discuss what recommendations we would like to make  
41 to the council regarding socioeconomic research that should be  
42 done and, Bill, have you gotten information at all? No. Okay.  
43 Let's take a ten-minute break and then we'll get back to doing  
44 this.  
45  
46 (Whereupon, a brief recess was taken.)  
47  
48 **BARBARA KOJIS:** I would like to reconvene the SSC meeting and,

1 Graciela, could you just provide some information about the  
2 socioeconomic recommendations and you mentioned there's a  
3 document available that you're researching right now?  
4

5 **GRACIELA GARCIA-MOLINER:** The council usually used to prepare an  
6 operations plan and that used to be discussed with the other  
7 councils and the region and that hasn't been done in a while and  
8 in those documents, basically we went FMP-by-FMP and identifying  
9 high, medium, and low-priority research.

10  
11 I believe that the last one was done in 2008 or 2009 and then  
12 the council has a document for research priorities from 2009 and  
13 I think that that document was sent around to the SSC and that's  
14 what I'm looking for right now, but in most cases, everything  
15 had to do with actual biological data gathering or age and  
16 growth or recreational fisheries.

17  
18 In the case of the socioeconomics, I believe that in most cases  
19 -- One of the documents states socioeconomic information on the  
20 trap reduction program in the USVI and so it's that kind of  
21 information.

22  
23 We have been talking to Juan Agar and he has been developing a  
24 list of economic research that needs to be done and that's where  
25 the cost analysis work on traps was done and the census comes in  
26 of the commercial fishermen and there was some information being  
27 collected on the subsistence fishermen, et cetera.

28  
29 I just emailed him and called him to see if he has that list, so  
30 that he can send it to us. I'm also searching for the research  
31 needs document that was circulated a while ago and so as soon as  
32 I find that in my emails, I will let you know, but there is no -  
33 - From all the ones that we have looked at, there is very little  
34 on the actual needs in terms of socioeconomics.

35  
36 **BARBARA KOJIS:** Which gives us an opportunity to discuss this  
37 and possibly develop it or ask for further information from NMFS  
38 on this.

39  
40 Does anybody have any recommendations as to how we could move  
41 forward with this in coming up with recommendations for the  
42 council regarding socioeconomic needs that might be able to be  
43 put into a request for proposals?  
44

45 **WALTER KEITHLY:** Again, from what Graciela said yesterday, what  
46 Miguel was interested in was an analysis of the social and  
47 economic impacts of ACLs and I think it's worthwhile possibly to  
48 start off with the basics that you have to ask the question of

1 will ACLs bring about some binding constraints on the fishermen  
2 or an expected binding constraint?

3  
4 If there's no binding constraint and in other words, they're not  
5 going to hit that target and be shut down and if they don't  
6 expect it, then maybe social and economic impacts will be nil.  
7 The greater the binding constraint is or the expected  
8 constraint, the more impacts you would expect to see.

9  
10 From an economic perspective, again, what you're primarily  
11 interested in would be the changes in producer and consumer  
12 surplus and behavioral changes by the fishing sector in response  
13 to either the expected or actual binding constraints.

14  
15 Certainly if there are binding constraints, in producer surplus  
16 you would expect reduction profits and any information that  
17 would generate information on the reduction of those expected  
18 profits would provide an estimate of the loss of producer  
19 surplus, consumer surplus, change in the price of the product  
20 due to a reduction in supply and the impact of change in welfare  
21 loss to the consumers due to that.

22  
23 From an economic perspective of the behavioral change in the  
24 fishermen, it's relatively straightforward what you need. You  
25 need information on costs of fishing and, again, as Graciela  
26 said, Juan has been conducting a number of surveys in recent  
27 years trying to obtain estimates of costs of fishing.

28  
29 Based on that information, we can look at the change in producer  
30 surplus due to some binding constraint. Consumer surplus is  
31 somewhat more tricky, probably, because we don't have any good  
32 demand estimates for locally-produced seafood and so what you  
33 would need there is a good time series of price and quantity  
34 information and the basic information needed to conduct a demand  
35 analysis.

36  
37 We have some information from Puerto Rico and much less for the  
38 Virgin Islands, because prices are not routinely collected  
39 there.

40  
41 Change in behavior of fishermen is very tricky. There's been  
42 studies conducted elsewhere that examine changes in behavior  
43 generally after the fact and because this regulation was  
44 initiated, this is the change we saw in the fishermen's  
45 behavior. I don't have enough information right now to say what  
46 information would need to be collected to begin to address that  
47 question.

48

1 My own opinion is that's years away in the Caribbean, because  
2 you usually need pretty rich databases to begin to look at that  
3 situation and I don't think we have it in the Caribbean.

4

5 **BARBARA KOJIS:** Any other comments or recommendations?

6

7 **KOSTAS ALEXANDRIDIS:** There is a bigger picture that I think may  
8 be worth at least the committee to consider and from the moment  
9 the research or the science is confined or restricted by the  
10 policy framework, then there's quite a difference between a  
11 policy-driven science and what is needed to move into a science-  
12 driven policy.

13

14 If you restrict the research only on the options that come from  
15 the policy agenda, then you're missing a big gorilla in the  
16 room, which is how to move into more efficient and maybe  
17 alternative collaborative management approaches and more towards  
18 an ecosystem-based approach to management.

19

20 I'm cognizant of the legislative mandate, but the question  
21 should be is the policy mandate driving the science or the  
22 science should be driving the decision making?

23

24 **WALTER KEITHLY:** To respond to that, I don't disagree. I'm just  
25 reacting to what Graciela indicated was the wishes of Miguel,  
26 which was the examination of the social and economic impacts of  
27 the ACL.

28

29 I don't disagree that there's a significant amount of other  
30 economic and social work that should be conducted. I could give  
31 a litany twenty pages long of work that's needed, but I'm just,  
32 again, reacting to what Miguel had expressed an interest in.

33

34 **BARBARA KOJIS:** Let me be more specific, because it was  
35 socioeconomic impacts of ACLs on the St. Thomas/St. John fishing  
36 community and so it was specifically St. Thomas/St. John,  
37 because he felt this was a pilot study and he thought this would  
38 be a community that would be amenable to working with scientists  
39 and socio-economists on this sort of research. That's one  
40 point.

41

42 The second point is we can make a recommendation as to whether  
43 or not this is an appropriate thing to do at this stage, because  
44 from the socio-economists point of view, is this something that  
45 we can establish kind of parameters for that then can be  
46 monitored over the years?

47

48 Is that something that's feasible to do or is this too early to

1 be looking at the social impacts of the ACLs, since they haven't  
2 been implemented yet? I would appreciate comments on that.

3  
4 In other words, is this time to get baseline data for monitoring  
5 or is this something that's just too early to actually come up  
6 with the impacts or can you determine what the impacts would be  
7 because you know that this means a potential reduction in fish  
8 catches and what impact is that going to have on the fishing  
9 community of St. Thomas/St. John?

10  
11 **MIKE SISSEWINE:** The idea behind a social and economic impact  
12 assessment is to do it pre-decisional and to attempt to predict  
13 what the impacts will be, so that that can be used in the  
14 decision making and so it's not too soon. Now, it may not be  
15 possible, but this is the time that it's supposed to be done.

16  
17 **TODD GEDAMKE:** I agree with Mike's comments that it's not too  
18 soon. I think the identification, more specific identification,  
19 of the needs from the council and what their objectives are on  
20 this would be very helpful.

21  
22 Bill and I just spoke and there was a suggestion that Brent  
23 Stofel get more involved with the needs. There may be a  
24 suggestion or recommendation from us to have a summary of data  
25 needs or objectives and corresponding needs by someone with  
26 expertise in this field and that could be presented to either  
27 the council and/or us for further review.

28  
29 **MIGUEL DEL POZO:** I agree with the fact that it is not too soon  
30 and that this -- The social and economic issues should be  
31 addressed sooner than later and probably before any management  
32 measure and as well, I think it's very important in terms that  
33 it creates or may help to move forward a more healthy management  
34 arena for primary stakeholders who want to feel to be a part of  
35 the process and it could help as well on the educational  
36 process, probably.

37  
38 As an example, I will bring my own experience. Now I'm working  
39 with commercial fishermen from the south of Puerto Rico and they  
40 are -- The ones I'm interviewing are completely unaware of the  
41 ACLs, for instance, and so definitely I think it will help to  
42 create a healthier arena for all the stakeholders involved.

43  
44 **BARBARA KOJIS:** If we're trying do this sooner or later, I think  
45 it may be a good idea to go to the council and ask them for  
46 their objectives and goals with respect to this, but at the same  
47 time, I think the council is looking to us really to kind of  
48 come up with objectives and goals, because they want more



1 information and they don't have the expertise either.

2  
3 **MIKE SISSEWINE:** I think it's obviously true that the council  
4 is looking to us and it's appropriate that we give this advice.  
5 The problem is we can't come into a meeting cold and rattle it  
6 off.

7  
8 I can rattle off four or five things that I think are important  
9 and Walter could probably rattle off a hundred and so on, but  
10 that's not an appropriate way to do business. It needs,  
11 somewhere before a meeting, someone to invest the time in  
12 preparing a thoughtful document so we can react to it and that's  
13 the problem we face right now.

14  
15 If you would like to go around the table and each one of us pick  
16 our three favorite things, I'm sure we could do that, but I  
17 don't think that's a particularly professional way to go about  
18 this task.

19  
20 **KOSTAS ALEXANDRIDIS:** I have a specific question and this is my  
21 -- A couple of months ago, we sent a letter and we've been  
22 invited here to present specific ideas for a specific process  
23 and project and I don't see -- What's the scope of me coming  
24 here and presenting specific ideas? As I said, I was invited  
25 here to do that.

26  
27 I don't see any clarity in terms of references for that scope of  
28 study and I think it needs to be defined. The scope of work  
29 needs to be clear and defined and deadlines and expected  
30 timelines for any submission. As we discussed yesterday, it has  
31 to go through a peer review process and what will be the review  
32 and evaluation criteria and how this process will be addressing  
33 the needs for transparency that adheres to a scientific review  
34 process and what are restrictions of funding levels and what are  
35 the deadlines and timelines for selections?

36  
37 These are the kinds of things that I would expect to hear from  
38 the committee here, but this is a question and what's the scope  
39 of me presenting this work in this meeting?

40  
41 **GRACIELA GARCIA-MOLINER:** The council is in the proposed rule  
42 stage regarding the ACLs for 2010 and 2011. One of the most  
43 important fisheries in the Virgin Islands is the lobster  
44 fishery, specifically for St. Thomas/St. John.

45  
46 The ACLs, as they stand right now, will mean that there will be  
47 a reduction of about 10,000 pounds, in the best case scenario,  
48 the way that it's proposed. If that happens, what's the impact

1 on the fishers that specifically target lobster regarding their  
2 fishery, their economics? What problems are they going to face?  
3  
4 What information do we need to collect in order to understand  
5 the impact in terms of their economics that they're going to  
6 suffer because of the ACLs? Based on the catch reports, we are  
7 already working in terms of improving the data collection for  
8 the landings, for the biostatistics, specifically regarding the  
9 biology of the species that we're interested in managing.  
10  
11 The other aspect, in terms of the people who are involved in the  
12 fishery, is the part that we're missing and so what elements do  
13 we need? Basically, it's a statement of work. What do we need  
14 to collect in order to understand what's going to happen?  
15  
16 At the same time, because there are these other projects going  
17 on, like the trap reduction program, like the escape vents that  
18 they want to put on the traps, those are also things that are  
19 going to impact their fishery and so all of this is running at  
20 the same time.  
21  
22 Basically, what Walter was saying in terms of is the demand  
23 going to be impacted and is the price of the -- I'm basing my  
24 comments on what I think I understood from what you said. What  
25 elements do we need to look at, the same way that we're  
26 improving the trip ticket, in terms of the social and economic  
27 factors?  
28  
29 That would have to be done over a fairly short period of time,  
30 probably in terms of a pilot, and that's what the council was  
31 after, to see if we can develop some kind of data collection  
32 that will monitor the economic aspects or the social aspects of  
33 this fishery.  
34  
35 The same way that we're doing a framework to change the ACLs, et  
36 cetera, if more information comes in from the biological side,  
37 then if more information comes in from the economic and the  
38 social side, does that also help us in changing the ACLs, if  
39 need be?  
40  
41 I think that it's not very clear for any one of us in principle,  
42 because no one had to deal with ACLs before. Basically, there  
43 are no quotas for the area except for the queen conch and that  
44 being an example, what happened to fishers that were used to  
45 harvesting 100,000 pounds in St. Croix and now they can only  
46 harvest 50,000 pounds?  
47  
48 In that sense, yes, the council is looking for what do we need

1 to do and what do we need to collect and how can we do something  
2 quickly that will tell you what we need to do in the long run?  
3 For the biology side, I think we're pretty much covered and we  
4 just need the funding to do that, but for these other two  
5 aspects, what do we need to do?

6  
7 **BARBARA KOJIS:** When you say what do we need to do, what would  
8 the council do with respect to socioeconomic data and how does  
9 that impact the actual ACL?

10  
11 **GRACIELA GARCIA-MOLINER:** That's something that I cannot answer,  
12 because I don't know how that's going to work out. Let's say  
13 that you're looking at the economic factors regarding the  
14 tourism industry in the Virgin Islands, which is a main target  
15 of the lobster fishery.

16  
17 If that collapses and you have an ACL, then nothing will happen,  
18 because they will be probably not even reaching that, but is the  
19 whole fishery based on that tourism industry? That's hearsay  
20 and that's what we know, but we don't have any actual  
21 documentation of that's what is happening.

22  
23 From the trip tickets, we cannot assess that it goes into the  
24 restaurant and goes into the hotel. We know that basically it  
25 doesn't go into the local markets, because of all the work that  
26 has been done on that Saturday morning marketplace. We don't  
27 see it in the streets when we go to the meetings.

28  
29 That's not the case for Puerto Rico. In Puerto Rico, lobsters  
30 get sold everywhere and so these are aspects that are different  
31 for the fisheries among the three islands and probably the  
32 information from St. Thomas won't apply to what you need to know  
33 from St. Croix and it won't apply to what you need to know from  
34 Puerto Rico, but at least you would have a basis for this  
35 information.

36  
37 **BARBARA KOJIS:** Thank you, Graciela. Based on that, can we make  
38 recommendations to the council?

39  
40 **MIGUEL DEL POZO:** I guess this will be a recommendation to  
41 revisit a discussion from yesterday. Apparently the council is  
42 more inclined towards a socioeconomic impact assessment, where  
43 Kostas's proposed study is a more comprehensive approach, which  
44 incorporates areas that, in my opinion, are very important, like  
45 the participatory approach that we talked a bit about it  
46 yesterday, but is it like a different standpoint now than from  
47 what the council wants and what Kostas as a sociologist believes  
48 that should be done? Can that be worked out in some way?

1  
2 **KOSTAS ALEXANDRIDIS:** I think part of what I proposed  
3 incorporates some of those impacts regarding ACLs, but before we  
4 do the specifics and try to look at that, we have to evaluate  
5 alternative livelihood options for the community, because  
6 without considering alternative options, whatever people say  
7 they will do, there is no benchmarking to compare with other  
8 alternatives and that's why you need to broaden out.

9  
10 Human judgment and human decision making is way more volatile  
11 and it's not specific like biological options or alternatives  
12 and so we need to go through a process to which we benchmark at  
13 the community level and what are the range of available options  
14 before we start. We have to diverge before we start converging  
15 again.

16  
17 I'm sure some of those discussions could be specific questions  
18 through the assessment and the survey and the interviews and the  
19 focus group exercises in an experimental what-if exercise and I  
20 could try to go through a range of options to see what if the  
21 ACLs are inducing non-sustainable livelihood outcomes for the  
22 community and what does that alternatives look at and where are  
23 they shifting their effort and what is likely to be happening  
24 and how we can put some risk associations or perceptions of risk  
25 behind some numeric data, even coming from qualitative research.

26  
27 I can see how we can address those and it could be one of the  
28 focal points, but to my opinion, if you actually focus only on  
29 that, you have the risk of instead of getting the response of  
30 what people really think, you get the response of what they  
31 think you want to hear and that's a big, big risk and introduces  
32 unnecessary bias into such a study.

33  
34 I think I would be -- I think I would be willing to work on how  
35 this research could deliver the things that the council needs,  
36 but to my opinion, you need to take a more broad approach.

37  
38 **MIGUEL DEL POZO:** I agree with that approach, but my question is  
39 more to the council and if the council will support a study like  
40 that and if that's their aim and if there could be an agreement  
41 between these two. Is that what the council would like to hear  
42 or would like to do?

43  
44 **BARBARA KOJIS:** Can you repeat the question for Graciela?

45  
46 **MIGUEL DEL POZO:** Basically, that the proposed study, it's a  
47 more comprehensive, holistic, if you like, approach considering  
48 many other aspects that are interconnected and as Kostas

1 mentioned, to be observed in order to have appropriate social  
2 data, but my question then is to the council and if the council  
3 is willing or supportive to then do a study like that. Is that  
4 what the council wants? The question was more to the council  
5 than to Kostas.

6  
7 **GRACIELA GARCIA-MOLINER:** Let me see if I can give you an  
8 example. When we were working with the Marine Conservation  
9 District way back in the 1990s, the Hind Bank to become a closed  
10 area, at that time there was no information on who was using the  
11 Hind Bank, et cetera.

12  
13 We attempted to do that ourselves. Miguel and I went all over  
14 the place asking people who was fishing in the area and what  
15 were they fishing and so we went through a whole process of  
16 workshops and meetings, et cetera.

17  
18 We finally had what was called a Rapid Socioeconomic Assessment,  
19 basically to figure out the ethnicity of the -- There is some  
20 information on the sectors that were using the MCD and so that  
21 was basically -- I was just looking at the document here and it  
22 went through the whole information that we had collected through  
23 the meetings and everything else and then went out into the  
24 field to ask questions about the background of the people who  
25 were using or not using the area.

26  
27 From the landings data, you can clearly tell who was fishing  
28 where and so we needed to know how many people were going to be  
29 impacted in terms of an area that was going to be completely  
30 closed versus the seasonal closure that had been established.

31  
32 The idea of this was that after that there was going to be a  
33 Phase 2 assessment, which basically, because of the way things  
34 worked out, it never really happened and so this has been  
35 hanging on the council's to-do list for a very long time.

36  
37 I can't answer what the council wants to do. The intent was to  
38 figure out, from a pilot, if this was going to work or not, if  
39 the approach that was taken from the ERAEF, but into the social  
40 and economics, was going to work. That's really the most that I  
41 can say regarding the council's interest, in terms of the  
42 proposed work.

43  
44 You can tell the council that you need more specifics or more  
45 time or you can actually turn around and say the scope of work  
46 for the information that you need regarding the social and  
47 economic impacts of the annual catch limits on the trap fishery  
48 for spiny lobster in St. Thomas/St. John is -- Then list off

1 basic information that you need, like demand, economic  
2 indicators, such as the number of tourists or the number of  
3 hotel occupations or the restaurants, et cetera, the people who  
4 are actually involved in the fishery.

5  
6 That, you get from the fishery census, which is already  
7 finished. You know who the people are in terms of the numbers,  
8 but then those people are part of a community and that's where  
9 the next step comes in. Have I made it a little bit clearer or  
10 is it more confusing now?

11  
12 **VANCE VINCENTE:** I don't know whether this is going to be useful  
13 or not and you let me know, but I just put up on my screen the  
14 final environmental impact statement for the Generic Essential  
15 Fish Habitat Amendment of 2004, in which the social impacts and  
16 the human impacts were addressed by the council.

17  
18 If I can just read, but just skipping over it, what it says  
19 regarding human impacts is that as a result of the  
20 implementation of the Generic Essential Fish Habitat Amendment,  
21 it says that we don't have the social information.

22  
23 Not only that, but in the last paragraph, it says the Science  
24 Center 2000 report on the round table discussion for improving  
25 federal fisheries management both nationally and for the  
26 Caribbean specifically calls for enhanced social science  
27 research, including the development of long-term, comprehensive  
28 social science data collection programs.

29  
30 In the U.S. Caribbean, the panel recommended more proactive use  
31 of social and economic information in the fishery management  
32 process and providing transition assistance to displaced fishers  
33 and it continues to the last line.

34  
35 The panel believes Puerto Rico and the U.S. Virgin Islands  
36 should have both commercial and recreational socioeconomic  
37 research programs. This is 2004 and we still don't have  
38 anything and so we're trying to evaluate the human impacts of  
39 now the ACL and so on and in 2004, we weren't able to answer it  
40 and we have not done anything regarding human impacts in  
41 relation to implementation of new fishery regulations and so  
42 it's time to do it. I hope that helps.

43  
44 **BARBARA KOJIS:** It's not like we haven't done anything, but it's  
45 not a comprehensive -- There's been bits done here and bits done  
46 there.

47  
48 **GRACIELA GARCIA-MOLINER:** The other thing that the council said

1 with this -- I was reading some of the -- There was, for  
2 example, an education ad hoc committee created by the council  
3 regarding outreach and education. We met at some point and the  
4 people who were in that group made a series of recommendations  
5 that were in most cases -- I went check, check, check, check and  
6 they were able to carry out the requests of the ad hoc  
7 committee.

8  
9 The same thing was done for the mesophotic reefs and the same  
10 thing was done for the -- I can't remember, but we had a number  
11 of ad hoc committees and so maybe one recommendation from the  
12 SSC to the council could be you need to get the people who are  
13 in the field of social and economic science together who know  
14 the area to set up the data collection effort.

15  
16 We have done a number of things and there have been a number of  
17 projects that have been carried out regarding the cost of trap  
18 construction, regarding the money that comes in from the  
19 recreational fishing sector, et cetera, but these are snapshots  
20 all over the place and there is no comprehensive data collection  
21 effort for the social and the economic sciences.

22  
23 One recommendation can be to do through this an ad hoc  
24 committee, people who know what's needed and how to do it and  
25 they can get together. The other thing would be how then can  
26 that be used, in terms of the annual catch limits and stock  
27 assessments, for example. What information, from that science,  
28 can you bring into the other groups? An ad hoc might be a way  
29 to go.

30  
31 **WALTER KEITHLY:** We've been discussing social and economic data  
32 needs for the Caribbean and the Caribbean is included in MARFIN  
33 and in CRP and if you look at the Federal Register for MARFIN,  
34 it has a list of projects, prioritized projects, and the same  
35 thing with CRP, I assume.

36  
37 I don't have access to the Federal Register for MARFIN and so  
38 forth, but I suspect that just in that you will find a list of  
39 the priority projects for the Caribbean and I assume that the  
40 Caribbean Council and the Caribbean Council staff had input into  
41 the research needs for the Caribbean.

42  
43 Again, I don't know if there's economics included in that or  
44 not, but there generally is. I know there is for the Gulf and I  
45 assume there is social and economic priority items for the  
46 Caribbean too in both the MARFIN and CRP.

47  
48 **KOSTAS ALEXANDRIDIS:** In my capacity, I'm also a member of the

1 IUCN Committee on Ecosystem Management and there's hardly any  
2 comprehensive ecosystem-based and not just focusing on specific  
3 economic issues and I think most of the research being done is  
4 specifically targeted on economic, market-based kind of  
5 approaches and does not take into account the broader social,  
6 behavioral, and collective process to which communities are  
7 involved into the whole understanding of fisheries from the  
8 community perspective and linked to specific ecosystem service  
9 provisions.

10  
11 There is a lot of unanswered questions and I think before we  
12 even address any specific questions, we have no idea what the  
13 inventory of the capacity of the community is for anything non-  
14 monetary.

15  
16 We have no idea what the social capital formation is and we have  
17 no idea about collective representation of group decision making  
18 and we have no idea what the livelihood options and outcomes are  
19 at those communities and what are the options that they're  
20 facing?

21  
22 Yes, it's a theoretical kind of discussion to say what if we  
23 displace those communities, but there is real livelihood options  
24 that we don't know what exists and what is the contribution, not  
25 just economically in the markets of the fishing activities, but  
26 also socially, culturally?

27  
28 Those communities now are designated as traditional fishing  
29 communities and there is broader social and cultural  
30 implications regarding anything that has to do with the  
31 approaches to management and not just the economics.

32  
33 All those things, we have no idea and that's why yesterday one  
34 of the focuses on the proposed research is first we need to  
35 understand what is the critical factors that drive this system  
36 before we even start looking at how we're going to tweak those  
37 factors to make decisions.

38  
39 From my perspective, it's fundamental to create research that  
40 actually first provides a framework for understanding how those  
41 things work out at the community level.

42  
43 **JORGE GARCIA:** When I first saw your presentation, my impression  
44 was that the scope of work was not consistent with the budget.  
45 I thought that you were proposing a much larger project, overly  
46 ambitious, compared to the budget that you presented.

47  
48 However, when you explained that there was some cost share



1 associated with what you were proposing here and I think that in  
2 that regard, perhaps the council will be getting a much larger  
3 project than they are actually paying for.

4  
5 From that regard and knowing that we do need some kind of a  
6 baseline socioeconomic project to grow from, I think that the  
7 council should look at this very carefully. I think that there  
8 might be a lot of benefits that this project might bring that we  
9 have not considered for many years.

10  
11 I take it very seriously. I take your project very, very  
12 seriously here. It's something that we are not used to  
13 considering in any detail here, but it has been long needed. I  
14 am not sure if this -- Because I'm not a socioeconomic expert,  
15 but I believe that there are some good departure points on your  
16 study and some of the roots might actually be beneficial in the  
17 long term.

18  
19 I do believe that in terms of engagement, for example, this  
20 project might be a good seed. This might be a good seed of  
21 engagement of the fishermen community in their business, if you  
22 can call it that, because fishermen make their living by  
23 fishing.

24  
25 They're going to be faced with difficult times in the beginning,  
26 in the next years or maybe not, but the thing is that we don't  
27 have any information on what are going to be the results of  
28 these regulations in the next few years and so having some kind  
29 of a multidimensional socioeconomic study in place might help us  
30 to understand what all this means for the Caribbean fishery  
31 community.

32  
33 I would certainly recommend that the council look at this  
34 carefully, perhaps with a full-blown proposal and add some peer  
35 reviewers to attend to look at the document and perhaps meet  
36 with the proponents, so that the council makes sure that their  
37 main pieces of information that are critically needed in order  
38 to get along this ACL process with a socioeconomic effort be  
39 considered or be attended, so that both things are met. In the  
40 end, I believe that this may be a project for which the council  
41 might be getting much more than they are paying for.

42  
43 **VANCE VINCENTE:** Just thinking back, I recall that the Natural  
44 Estuary Program, U.S. EPA Natural Estuary Program in Puerto  
45 Rico, did conduct a social survey on the fishers of the whole  
46 estuary region and I was amazed.

47  
48 I was a member of the Management Committee of the Natural

1 Estuary Program then and the amount of information that was  
2 obtained was really valuable, because it was not only the catch  
3 data or the species composition, but what they did with the fish  
4 specifically.

5  
6 They said which fish were used for turnovers and which fish were  
7 distributed, whether to among family members, among friends,  
8 what percent of their catch went directly to the restaurants and  
9 which were not and they were very comparative, because they were  
10 actually the ones providing the data and so when the data comes  
11 from, like you say, from the bottom-up, the amount of  
12 information, not only social, but also ecological and  
13 scientific, is amazing and so that report was completed.

14  
15 Those funds we assigned to the Department of Natural Resources  
16 and so that report is available at DNR and also at the U.S. EPA  
17 Caribbean Field Office Library, but I was impressed by the  
18 amount and quality and sensitive information that we obtained  
19 from that study.

20  
21 **KOSTAS ALEXANDRIDIS:** There are multiple additional benefits  
22 from that. The first point I wanted to make, and in agreement  
23 with the wealth of data we actually get from those data,  
24 similarly we just finished a project on the ethnoecological  
25 aspects of the fishers in the Virgin Islands.

26  
27 Actually, we have hundreds of variables collected from fishermen  
28 from big two-hour interviews, sitting specifically and fleshing  
29 out what is the things that makes them -- What forms their  
30 identity and sense of community and what they experience, older  
31 fishermen especially, through thirty or forty years of fishing  
32 and how they see the ecological condition changing and how the  
33 society changes parallel.

34  
35 We are having data from fishing methods to boat sizes to history  
36 of construction and of local boats versus buying -- Engine types  
37 and we're talking about hundreds of variables and those can be  
38 brought together to really create a comprehensive inventory of  
39 what is all the factors that play a part of what substitutes a  
40 livelihood at the fishing community.

41  
42 In addition to that, one of the critical aspects for this  
43 proposal, and I think this came from a stated desire from the  
44 council, is to start creating local expertise here.

45  
46 We are engaging graduate students and we're hoping some of our  
47 program -- The masters program, for example, at UVI is creating  
48 managers with skills and expertise to engage the community

1 trained in methods and so I think we aspire and we think that  
2 building that capacity at the local level, at universities and  
3 at research centers, working together with management  
4 structures, can qualitatively bring the skills up and create a  
5 whole school of thought of people who have that very needed  
6 skills to work with the community in meaningful ways.

7  
8 In that sense, as being part of the Caribbean community and  
9 being a unique academic environment, we also, through that  
10 process, we hope to start creating the expertise and the  
11 capacity and we can work with broadening that and training  
12 people and doing workshops and working with other Caribbean  
13 institutions, maybe looking at broader regional collaborations  
14 here.

15  
16 Yes, it's a bigger picture and this is what is in the back of  
17 our minds as we're getting more and more into that research, but  
18 I think also the council would like, at least what Miguel was  
19 expressing to us, was that there is a need to build that  
20 capacity.

21  
22 We do a pilot study and then we talk with -- We create skills  
23 that could be transferred to other institutions and could be  
24 calibrated for other case studies, but at the first stage, I  
25 think it has to be a case-by-case, until we have a broader  
26 understanding.

27  
28 **MIKE SISSEWINE:** I don't think we're going anywhere in this  
29 discussion, because I think we're discussing three different  
30 things. One is should this proposal be funded or some  
31 modification of it?

32  
33 I think the response to that, based on our discussions earlier,  
34 is that with the appropriate full peer review and full proposal  
35 development that it has the potential to do a lot of good  
36 things, as just mentioned. There's good research and local  
37 capacity building, investment in the university, all that sort  
38 of thing.

39  
40 If that's an objective, and I think it's a good objective, that  
41 the council wants to pursue, my reaction is that's very laudable  
42 and meritorious and it ought to be pursued. I'm not convinced  
43 that it's the appropriate role for the council, but there is a  
44 need for that sort of investment in both research and capacity  
45 building and this may be a way to pursue it, again with the  
46 appropriate full proposal and appropriate peer review.

47  
48 The second question that we've been discussing is how do we get

1 on with doing a social and economic impact assessment of ACLs,  
2 potential changes in the amount of lobster that are going to be  
3 able to be landed in St. Thomas, to be specific.

4  
5 To me, that should be done. It's a relatively almost cookbook  
6 need. There are examples of what social and economic impact  
7 assessments need to look like according to the agency's social  
8 impact assessment guidelines and various guidelines for  
9 environmental impact assessments and so if this were being  
10 asked, then yes, that should be done by somebody.

11  
12 We've heard that that probably isn't the interest of the people  
13 who prepared this particular proposal, even though there could  
14 be some spinoffs of that information, but that should be done  
15 and it's not a challenging thing to develop a statement of work  
16 for that. Presumably there are examples of statements of work  
17 for that sort of project that have been developed elsewhere.

18  
19 The third question relates to whether broadly there needs to be  
20 a strategic approach to dealing with the needs for social and  
21 economic research in the Caribbean and I think we all agree that  
22 that is a need.

23  
24 There's been other reports that have come to that conclusion and  
25 there have been studies done, as Graciela has mentioned, but  
26 they're sort of piecemeal and so having a strategic approach to  
27 it and potentially generating commitment to fund it would be a  
28 very positive step forward.

29  
30 To me, that approach or that would require setting up some sort  
31 of a working group with the appropriate expertise to spend  
32 probably a couple of days preparing such a document. I think we  
33 could report back on all three of those items and get the --  
34 They all need to be pursued in some way or another.

35  
36 What degree is the responsibility of the Caribbean Council  
37 versus NMFS versus the National Science Foundation or somebody  
38 else, I don't know, but they're all things that need to be  
39 pursued one way or another.

40  
41 **VANCE VINCENTE:** Regarding peer reviewing of the proposal, if  
42 Dr. Kostas already is receiving funds from the National Science  
43 Foundation, I'm sure he got the peer review from head to toe.  
44 The NSF doesn't go around handing out money. That's one thing.

45  
46 Another thing is that I don't understand much about the model  
47 and so my comments are kind of limited, but from what I could  
48 gather from his presentation yesterday, just adding an ACL in

1 there is another ingredient. This kind of program has much more  
2 valuable information not only to ACLs, but everything else that  
3 we've been talking about here.

4  
5 The catch statistics, we'll be able to get more honest data,  
6 real scientific data, when it comes from the bottom-up and the  
7 fishers are participants and they're making observations on  
8 things, on factors, on stochastic events, that we're not aware  
9 of.

10  
11 For example, they can really tell you what the effect is of a  
12 storm or of a particularly rainy year or a particularly dry  
13 period, extended dry period and all this climatic stuff and  
14 changes that will come into the game here, as you mentioned  
15 yesterday.

16  
17 I think the output is going to more ample than the kind of  
18 information that we're trying here to use by squeezing numbers,  
19 which are themselves kind of a little shaky, as we know, because  
20 we don't understand the variables that affect those numbers that  
21 we're dealing with. That's my final comment.

22  
23 **BARBARA KOJIS:** Anybody else have comments on this? It looks  
24 like, from what Mike said, is there are three recommendations  
25 that we've discussed. One is supporting the research proposal  
26 and asking for a full proposal to be submitted.

27  
28 One of the issues I have with that is I think -- I don't want to  
29 waste Kostas's and the group's time in putting together  
30 something that would not be -- That falls well outside of what  
31 the council would fund.

32  
33 Is there any way of providing some information in getting a  
34 working group together or what have you that could indicate what  
35 funding -- What information that the council would be willing to  
36 fund and what sort of information -- That may come with a  
37 strategic approach in a working group that looks at what  
38 information we need to gather and then provide that as far as  
39 this is the type of information that the council needs and we  
40 could out a proposal for a project associated with that that  
41 could be expanded upon as per Kostas's proposal.

42  
43 If there's no more comments about this, maybe I'll put something  
44 together with respect to all of our discussion here and then  
45 pass it by the SSC via email, so that you can make comments on  
46 this before our recommendation for the council or is it -- The  
47 other option is, because we do actually have time, is to have  
48 somebody who is willing to volunteer to write up something about

1 our recommendation and we could take an early lunch and then we  
2 could discuss it afterwards. How would you guys like to move  
3 forward with this?

4  
5 We have three good recommendations from Mike Sissenwine on steps  
6 that could be taken or need to be taken. In general, does  
7 everybody concur with those three recommendations? One is  
8 generally asking for submission of a research proposal in more  
9 detail.

10  
11 Another is the socioeconomic assessment and look for a statement  
12 of work for this elsewhere and ask for socioeconomic assessments  
13 to be done and then the final was a working group to come up  
14 with a strategic approach for socioeconomic research in the U.S.  
15 Caribbean.

16  
17 **MIKE SISSENWINE:** I'm not necessarily saying we should recommend  
18 any or all of those things. My comment was that we've been  
19 discussing all three of them and that we could give feedback on  
20 those three topics as to how they might be approached, but I  
21 think that's different from saying we recommend them.

22  
23 I think our discussion and the feedback would be that we have  
24 extensively discussed this particular proposal and that there is  
25 potentially merit, scientifically, in terms of research  
26 produced, in terms of capacity building in the community and  
27 trust building in the community, and just data spin-offs that  
28 could help for things like impact assessments.

29  
30 If the council had the ability or if there was some other  
31 vehicle for having such a project funded, then it would be worth  
32 pursuing it with a full-blown proposal. I would only mention  
33 the full-blown proposal as sort of the last point if there's  
34 some determination that there's the ability to fund something  
35 like this, so as not to waste people's time.

36  
37 The second point was that we've discussed the issue of the  
38 council and its charge to us and the need for a social and  
39 economic impact assessment, specifically to deal with changes in  
40 catch that might result from these ACLs.

41  
42 The feedback we should give is that our understanding is that  
43 such an assessment should be done and if it's to be done via  
44 some sort of contract, there should be various examples of the  
45 statement of work for doing a social and economic impact  
46 assessment from those that have been done elsewhere or done  
47 before.

48

1 Then the third suggestion is that this whole discussion brings  
2 to the fore the need for a more strategic approach to collecting  
3 data and conducting research on social and economic issues in  
4 the Caribbean and if there's a desire to pursue that, that's  
5 probably best pursued by setting up an ad hoc group of experts  
6 to describe that strategy.

7  
8 I'm not sure I'm recommending any of those. I'm just saying  
9 those are suggestions to the way forward if the council feels  
10 that it wants to move forward.

11  
12 **BARBARA KOJIS:** Any other comments regarding this?

13  
14 **MIGUEL DEL POZO:** I guess then that we should -- I don't know if  
15 this is a practical kind of thing, but then ask the members how  
16 they feel about those points.

17  
18 **BARBARA KOJIS:** In other words, do we have a consensus that this  
19 is what we would like to present to the council with what Mike  
20 just recommended? Does everybody agree? Okay. Then we'll go  
21 forward with that as the consensus statement to the council,  
22 with the three points that he -- These are just suggestions for  
23 moving forward and indicating what we discussed and not  
24 recommendations, per se. Okay.

25  
26 Thank you very much, Kostas. We appreciate your input on this  
27 and thanks very much for taking the time to make the  
28 presentation and showing us what you're doing and I hope these  
29 projects do go forward.

30  
31 I think it will move forward the discussion within the fishing  
32 community and the knowledge that the fishing community has, as  
33 well as providing us with a lot of information, the council with  
34 a lot of information.

35  
36 **KOSTAS ALEXANDRIDIS:** I would like to take the opportunity to  
37 thank you and the committee members here for your time and your  
38 attention and I'm looking forward to seeing something meaningful  
39 coming out of this process. I see a lot of positive directions  
40 and thank you very much.

41  
42 **BARBARA KOJIS:** A question to the council members. Would you  
43 like to just continue on with the last topic, which is the  
44 discussion of where we are with the data collection?

45  
46 It's the review of the fishery monitoring programs and providing  
47 recommendations regarding the monitoring programs. Would you  
48 like to just go forward with this before lunch and then have a

1 late lunch, because I don't know that this is going to take very  
2 long.

3

4 **BILL ARNOLD:** I just have to run and check out.

5

6 **BARBARA KOJIS:** Let's take a ten-minute break then and let Bill  
7 do the checkout and then we'll go back to this discussion.

8

9 (Whereupon, a brief recess was taken.)

10

11 **REVIEW FISHERY MONITORING PROGRAMS AND PROVIDE RECOMMENDATIONS**

12

13 **BARBARA KOJIS:** Just a question before we start this meeting.  
14 What we're thinking of doing is just discussing the last topic  
15 and then we'll go to lunch and I'll write up a little thing that  
16 we've discussed right now about the socioeconomic aspect of it  
17 and probably run it by Mike Sissenwine and then after lunch, we  
18 can just go over it and review it and come to a consensus. Does  
19 that sound good? Okay.

20

21 Let's just start the meeting again and let's -- We've got the  
22 last topic on the agenda before we break for lunch and this the  
23 review of the fisheries monitoring programs and any  
24 recommendations that we have for the monitoring.

25

26 Yesterday, Daniel Matos gave us some information and he provided  
27 the form that he's using for the fisheries monitoring and  
28 indicating with the new form how well this is going. I think he  
29 indicated that 30 percent of the forms look like they're  
30 completely filled out and they're trying to educate the  
31 remaining fishers so that they'll fill out the forms completely  
32 so that they have all the data.

33

34 That was an extensive amount of data that each of those forms  
35 required, not including pounds and gear and how many gears and  
36 like for traps, how many traps they had and also the cost of  
37 fish per pound and so there's a lot of information for each of  
38 those data points that fishermen are asked to provide.

39

40 If they can get that extensive data, that looks like it would be  
41 really moving things forward. Are there any comments about the  
42 information that was provided for Puerto Rico or is there any  
43 further information, Todd, that you have about how the  
44 monitoring program is going, the new monitoring program?

45

46 **TODD GEDAMKE:** In previous meetings, both the SSC and the  
47 council, I think we've gotten updates as to what was proposed.  
48 The Center has pulled together new forms for both the Virgin



1 Islands and assisted in the development of the forms in Puerto  
2 Rico.

3  
4 We got the update from Puerto Rico from Daniel yesterday and for  
5 the Virgin Islands, I believe the forms were made available for  
6 the July 1 renewal and the intent is to do an evaluation of  
7 those forms and provide initial feedback at around the council  
8 meeting, which is December 13.

9  
10 I have no information. There has not been an evaluation of  
11 what's been coming in over the past few months yet, but that's  
12 on our list for the very near future and we're going to kind of  
13 do an early evaluation on that and try to get some feedback both  
14 to the territorial agents and to the Center at that point in  
15 time.

16  
17 Just as another aside, the Center is also developing an  
18 electronic submission software package right now and so the way  
19 it's been handled in the past is the data forms are entered into  
20 -- In the Virgin Islands, they're entered into an Access  
21 database, but the Center has developed a program which will  
22 allow the information to be entered and available to the Center  
23 on a much more timely fashion.

24  
25 As has been expressed in previous meetings, the timeliness of  
26 the reporting is of great concern, especially with monitoring  
27 the ACLs, and the software is nearing completion on that and we  
28 hope to have that in place in the very near future.

29  
30 **GRACIELA GARCIA-MOLINER:** Let me just say that for the U.S.  
31 Virgin Islands that Roy Pemberton is the new Director of  
32 Fisheries and so he just recently came in and there are quite a  
33 number of changes that are taking place, but as you know, they  
34 are slow in taking place.

35  
36 One of them being is that the invitations to the people to come  
37 to meetings need to be forty-five days in advance and, of  
38 course, none of us really use that long date and things are  
39 trying to change, so that they can use funds and that kind of  
40 things to come to the meetings. We sent out the dates in  
41 October and so they didn't have enough -- They didn't have the  
42 forty-five days to answer to that request and so that's a  
43 problem, but hopefully by the council meeting, we should have an  
44 update on what's going on.

45  
46 **BARBARA KOJIS:** Maybe one of the things -- I know that goes back  
47 and forth to thirty days and forty-five days, because usually  
48 the Governor signs off on all travel outside the territory in

1 the Virgin Islands, but is it possible that the council could  
2 set up like an annual schedule, so that the dates are -- I think  
3 some of the other councils do this.

4  
5 They have an annual schedule of dates for meetings and I imagine  
6 what you could do is cancel the meeting if you don't need an SSC  
7 meeting or what have you, but at least the applications then  
8 would be in for the travel and you can always cancel the travel  
9 and it's not a problem. It's just that you've got to have those  
10 applications in on time.

11  
12 That might be a recommendation, is that the council at the  
13 beginning of every year just establish an annual schedule, but,  
14 Graciela, you may know that there's issues around doing that  
15 that I'm not aware of.

16  
17 **MIGUEL DEL POZO:** I have a comment about the trip tickets, the  
18 single trip tickets. It's just something that I want to bring  
19 to the table and I don't know if it's completely off topic and  
20 let me know, but I think it's important and we should address it  
21 at some point.

22  
23 There is a merging of species that I have documented, a merging  
24 of species. I have seen it as a constant in certain areas and  
25 there is as well let's say translations of species into other  
26 species that are not on the form, like rainbow runners, for  
27 instance, being documented or written down as bar jacks.

28  
29 I would like to know as well if the -- It's a shame that Daniel  
30 is not here, but if the correction factor takes into  
31 consideration the fact that there is some reports where there is  
32 no activity taking place of certain fishers who want to retain  
33 their license when they are not actually fishing.

34  
35 I know the correction factor works with the lack of data, but  
36 does it deal with fictional data, let's say, with the made-up  
37 data?

38  
39 **BARBARA KOJIS:** In other words, you're stating that there are  
40 fishers that are not turning in no fishing reports or they're  
41 not just not turning in a report, but they're just turning in a  
42 report where they make up the amount of fish that they've caught  
43 because they want to be able to retain their license?

44  
45 **MIGUEL DEL POZO:** Exactly.

46  
47 **BARBARA KOJIS:** I don't know. That's something we would have to  
48 ask Daniel, if he's aware of that and how he's taking that into

1 account.

2  
3 **TODD GEDAMKE:** I guess first of all, there are supposed to be  
4 non-fishing reports submitted and so if a fisherman does not  
5 fish during a month, there is supposed to be a record that they  
6 did not fish during that month and so that would take into  
7 account those periods where they're not reporting landings.

8  
9 As to fishermen that may or may not be making up numbers during  
10 specific time periods, as part of the data improvement plan,  
11 validation surveys have been designed and those surveys involve  
12 having port agents go to the docks and record directly what they  
13 observe onboard each of those vessels.

14  
15 Those records can then be cross-referenced with what is  
16 submitted through the self-reported trip tickets and a  
17 misreporting factor can be included as part of that expansion  
18 and so that's part of the plan.

19  
20 The problem in doing this in the past has been there is no, in  
21 Puerto Rico, no unique identifier to be able to tie trips where  
22 port samplers were looking at the catch onboard that vessel to  
23 the records that are submitted by the fishermen and so there was  
24 no one-to-one unique identifier on those and so that type of  
25 validation could not be conducted in the past, but that's  
26 designed into the new program and so that will be able to be  
27 done.

28  
29 **BARBARA KOJIS:** One of the questions that I have is there  
30 opportunities for actually training fishermen who have a license  
31 to fill out those reports and identify fish, even to the point  
32 where maybe they have to pass a little test?

33  
34 In the Virgin Islands, I don't think they have requirements for  
35 the fishermen to report on more than about twenty species of  
36 fish and they're commonly caught fish, for the most part, and so  
37 it would be relatively easy, I think, for the fishermen to be  
38 able to identify once they're kind of trained and so on and it  
39 would be, I would think for most of them, easy-ish to pass the  
40 test or whoever is filling out the report form for them to pass  
41 the test, but is it --

42  
43 Would it be a good idea to make a recommendation that some sort  
44 of education program be instituted at the time that the  
45 fishermen come in to register for commercial fishing, so that  
46 they know how to fill out the form and you're fairly confident  
47 they can identify the species?

48

1 In the case of Puerto Rico, are they required to identify all  
2 the fish species that they land or is it only certain species  
3 that they have on that form that's required? They've got quite  
4 an extensive list of species and is it that you're trying to get  
5 identification of all the species that they land?

6  
7 **GRACIELA GARCIA-MOLINER:** The way that they have worked it out  
8 is that they -- I don't know if you noticed that they are  
9 grouped and so the people who are basically fishing that guild,  
10 for lack of another name, are very aware of what those species  
11 are.

12  
13 I don't know what they do with the incidental catch of other  
14 species, but I think that that's related to that question that  
15 he had at the top that has this trip been sampled by the port  
16 agent. I think that he was eventually trying to get to the  
17 point where he was cross-referencing all the information.

18  
19 **MIGUEL DEL POZO:** I just wanted to add that I don't know if  
20 that's the case today, but at least a few years back, the port  
21 agent covering the east had under his charge from Vieques,  
22 Culebra, and I think down to Salinas or something like that.  
23 During my stay in the community for a year-and-a-half, the  
24 presence was limited, I would say.

25  
26 **BARBARA KOJIS:** In Puerto Rico, the port agent is meant to be,  
27 in part, an educator of the fishers to also help them in filling  
28 out their catch report forms and identifying fish and training  
29 them to identify fish and is that what might be part of the role  
30 of the port agent?

31  
32 **GRACIELA GARCIA-MOLINER:** That was the original idea. There  
33 have been a number of years when port agents have been reduced  
34 to two, I think at one point, and at the most it was three to  
35 cover the whole island. They have recently hired two additional  
36 people and so they should be back to their normal distribution.

37  
38 When they do the interventions and when they're measuring the  
39 fish, et cetera, the idea was that they would be talking to the  
40 fishermen and showing them -- Remember when we were doing the  
41 parrotfish, for example, and what little difference they could  
42 tell one from the other, et cetera, if they could.

43  
44 That's one of their roles, but that's not their primary role,  
45 but I think that the ones that have been there for a fairly long  
46 time, they see themselves as being part of that education and  
47 outreach program.

48

1 **VANCE VINCENTE:** I think the trip ticket by Daniel Matos was  
2 quite complete, but there are at least five parameters that can  
3 be collected once and as I mentioned yesterday, if you select a  
4 specific fisher and/or fish house and you provide them with a  
5 GPS and show them how to use a GPS and how to mark a waypoint  
6 and then modifying the trip ticket just to include one little  
7 box which would consist of a GPS number, and the GPS must have a  
8 number, and then another space for a waypoint number.

9  
10 That way, when the fisher gets back, maybe the same GPS can be  
11 used by different fishermen at different times of the day or on  
12 different days, but the amount of information that you can get  
13 with that is just -- Once you get the information, the Fisheries  
14 Laboratory just downloads your latitude and longitudes and marks  
15 it on an electronic nautical chart.

16  
17 Right there, you can find out specifically the depth that they  
18 were fishing, the location, which was another square that he had  
19 in his form, the distance from shore, and the habitat type.  
20 You're getting four parameters, which can be very useful  
21 regarding habitat and precision as to the location where they  
22 were fishing.

23  
24 That way, you can know whether they are crossing municipality  
25 boundaries, which usually happens, but we don't know. For  
26 example, the data for the municipality of Penuelas is supposed  
27 to be within the municipality, but I know they don't. They go  
28 beyond and they go to Ponce or they go east to Guayanilla or  
29 even to Guanica and this way, you find out.

30  
31 You create a GIS layer over time and you find that these fishers  
32 are fishing in this location and the frequency and with all this  
33 information and it's something that is worth the money and a  
34 twelve-channel GPS now costs about a hundred dollars. You don't  
35 need all those fancy maps that they come with, but all you need  
36 is just that point.

37  
38 **BARBARA KOJIS:** I think it's an excellent idea. I know in the  
39 Virgin Islands there have been various research projects that  
40 have tried to ask fishers to take out GPS and they've refused  
41 to, because they don't want anybody to know where they've been  
42 fishing, et cetera.

43  
44 **VANCE VINCENTE:** That's precisely why I said that you select  
45 specific fishers, fishermen that are responsible that have a  
46 responsibility towards conservation and value our efforts in  
47 trying to conserve the fishery resources and so it's not going  
48 to be for everybody and I know they will not, but there's always

1 some educated fishermen or fisherwomen that probably are willing  
2 and maybe it doesn't even have to be the fisherman himself, but  
3 it can be somebody else on board.

4  
5 It can be a student, one of Dr. Kostas's students, for example,  
6 or they can have somebody else go and take this information for  
7 them. It doesn't have to be a fisherman. It doesn't have to be  
8 a fisher. It can be a student or somebody from the Fisheries  
9 Laboratory or somebody, but we have the technology cheap and we  
10 can get so much information on this.

11  
12 **BARBARA KOJIS:** Any other comments about the monitoring program?  
13 Any other additional information? Recommendations then from the  
14 SSC, we've heard from Miguel that identification for at least  
15 some fishers is a problem of identification of fish is a  
16 problem, so that there needs probably to be some sort of --

17  
18 **MIGUEL DEL POZO:** More than an identification, it's a problem of  
19 documentation. They can identify the fish, but they translate  
20 those landings into market reality, into price realities. It's  
21 a different standpoint.

22  
23 It's not a biological standpoint for them, but it's a livelihood  
24 maybe standpoint. They can definitely tell species apart and  
25 they know -- Although they don't different names for some  
26 species, they can tell them apart.

27  
28 It's just that when the fish get to the fish house, those  
29 landings, some of them get merged and they have the same price  
30 and they just will put all those groups together and if you --  
31 That's a particular case study, but I'm almost positive that it  
32 could happen through all the islands and that makes us question  
33 the validity of those landings then if they are merging other  
34 groupers together with red hind. It's just a matter not of  
35 identification, but of translating those landings into market  
36 reality, let's say.

37  
38 **BARBARA KOJIS:** Would they be willing, if they understood --  
39 They can identify the different species and is the difficulty in  
40 the fact that there's just too many species on that list and  
41 they are just -- It's easier for them to just say everything is  
42 red hind or is the fact that they don't understand the form is  
43 requiring them to separate those species out and which  
44 compartment is really supposed to be red hind and which is this,  
45 what's supposed to be coney or what have you? What is the  
46 problem?

47  
48 **MIGUEL DEL POZO:** I think it's a matter of convenience, to be

1 honest. Some of the landings could be -- The boat will be  
2 docking at 3:00 a.m. and they're just weighting them together.  
3 It's a matter of convenience.

4  
5 They can tell them apart and they understand -- In my opinion,  
6 in my experience, they understand the ticket. It's just a  
7 matter of convenience and maybe not realizing as much the  
8 biological implications as compared to the marketing indications  
9 of it.

10  
11 **TODD GEDAMKE:** I guess in the development of the forms and the  
12 development of the program, species identification was  
13 definitely a question that was raised. You touched on outreach  
14 and training and that's also something that has got to be part  
15 of any new data form development and I guess in -- Trying to  
16 focus this, the update on the new monitoring program, it's a  
17 little premature for us to be taking a look at how that's  
18 working.

19  
20 I would suggest that our recommendation or our suggestion be  
21 that as soon as it becomes available, the SSC is provided an  
22 update on the new data collection program and an update on the  
23 status. I expect that at least the preliminary stuff will be  
24 available by later this year.

25  
26 **BARBARA KOJIS:** One of the things that you are looking at in  
27 your validation is how accurately the fishermen are reporting  
28 the species?

29  
30 **TODD GEDAMKE:** The validation is more or less the next phase.  
31 We've got the new forms on the ground right now and the initial  
32 evaluation of the project is going to be more or less, as Daniel  
33 did yesterday, seeing that the forms have been completely  
34 correctly and that they're getting timeliness and they're  
35 getting this level of response or compliance to it.

36  
37 The validation surveys are going to be something that's much  
38 farther off in terms of feedback on that and in terms of being  
39 able to evaluate the effectiveness of it.

40  
41 We're drawing together a very comprehensive plan which overlays  
42 the new data collection forms, but to get people on the ground  
43 and to conduct those validation surveys, we're looking at --  
44 Once people are on the ground, you're looking at at least a year  
45 of conducting those surveys before we'll start getting  
46 information back from it.

47  
48 **BARBARA KOJIS:** Given the information from Miguel regarding his

1 on-the-ground experience, is there any recommendation that the  
2 SSC might provide regarding port agents and assistance to  
3 fishers?

4  
5 **TODD GEDAMKE:** I think the recommendation can be relatively  
6 simple, which is that the port agents should recognize that  
7 species identification is a potential concern as well as part of  
8 the training, but making note of potential species  
9 misidentification issues.

10  
11 That's come up in a couple of different cases. I think in terms  
12 of the expanded information, the larger number of species, we  
13 have to make sure that the port agents are all on the same page.

14  
15 As you know in Puerto Rico, you can go from one coast to another  
16 and there's a different name and so it really needs to be taken  
17 into consideration by the port agents and that training needs to  
18 occur not only with the fishermen, but with the port agents, to  
19 make sure everyone is on the same page.

20  
21 I think that our recommendation can simply be that species  
22 identification and consistency is of concern and should be a  
23 focus of the training and implementation of the new forms.

24  
25 **BARBARA KOJIS:** Any other recommendations? Is there any other  
26 discussion of the monitoring program? Why don't we go to lunch  
27 and then after lunch -- It's almost 12:30 right now and why  
28 don't we come back at 1:30? We'll come back at 1:30 and we'll  
29 just go over the final -- I'll put the summary together and we  
30 can go over that and then we'll be done with the meeting.

31  
32 (Whereupon, the meeting recessed for lunch on November 16,  
33 2011.)

34  
35 - - -

36  
37 November 16, 2011

38  
39 WEDNESDAY AFTERNOON SESSION

40  
41 - - -

42  
43 The Scientific and Statistical Committee of the Caribbean  
44 Fishery Management Council reconvened at the Embassy Suites  
45 Hotel, San Juan, Puerto Rico, Wednesday afternoon, November 16,  
46 2011, and was called to order at 1:30 o'clock p.m. by Chairman  
47 Barbara Kojis.

48



1                   **FURTHER DISCUSSION OF SSC RECOMMENDATIONS**

2  
3 **BARBARA KOJIS:**       On the screen are a report of our  
4 recommendations regarding the monitoring program and the  
5 socioeconomic issues. Please look over these and make any  
6 corrections and we'll just discuss and come to a consensus  
7 regarding our report to the council on these issues.

8  
9 Has everybody read that? Maybe we could go back to the top and  
10 we could just take the first section on monitoring and are there  
11 any comments or corrections on this one or any changes that need  
12 to be made?

13  
14 **MIGUEL DEL POZO:** I would recommend that we should probably say  
15 that -- Instead of "e.g., small grouper as a single species",  
16 that three different species within the Epinephelus genus are  
17 incorporated into one species, to make it more punctual.

18  
19 **BARBARA KOJIS:** Miguel, is that okay, that change? Okay. Any  
20 other changes or corrections? Dr. Gedamke had an opportunity to  
21 look at this before he left and so he has reviewed this as well.

22  
23 **JORGE GARCIA:** For the record, I would also add that not as a  
24 correction to this document, but also I would like to comment  
25 that a similar situation is found with the identification of the  
26 parrotfish.

27  
28 They're usually lumped as parrotfish for a good reason and I've  
29 mentioned this elsewhere, but I agree with the same problem that  
30 we are having with the Epinephelus, with the small groupers, but  
31 the scarids are another large family where identification is  
32 going to very hard for fishermen to post correctly unless they  
33 are otherwise trained to do so.

34  
35 **BARBARA KOJIS:** Very good.

36  
37 **MIGUEL DEL POZO:** I just think that we should rephrase that,  
38 because it seems like I'm saying it about the parrotfish and I  
39 am positive that that happens, but I haven't seen it and so it's  
40 --

41  
42 **BARBARA KOJIS:** Okay. Should we say "SSC members" and "they"  
43 instead of "he" and "they have"? It does imply that you may  
44 both have seen it, but it's a little bit fuzzy enough. Is that  
45 better?

46  
47 **MIGUEL DEL POZO:** I think that the idea gets across.

1 **BARBARA KOJIS:** We could even remove your names and just say  
2 "SSC members indicated" and would you prefer that?  
3  
4 **MIGUEL DEL POZO:** It doesn't have to be me or him, but just --  
5  
6 **JORGE GARCIA:** Does this justify our recommendation for the  
7 report to go there and provide some additional training for  
8 fishermen towards the better utilization of these trip ticket  
9 forms?  
10  
11 **BARBARA KOJIS:** Now it reads "SSC members indicated that they  
12 have observed fishers recording several species, e.g., small  
13 Epinephelus (grouper) and Scarids (parrotfish), as a single  
14 species. Any other corrections or changes?  
15  
16 If we look at the recommendations regarding the monitoring  
17 programs, do we have a consensus that this is what we want to  
18 convey to the CFMC? Is there anybody that objects to this?  
19 Okay. This will be our report on the monitoring programs.  
20  
21 Let's go down then to the socioeconomic issues. Are there any  
22 corrections or comments or whatever to this section? Any  
23 corrections or comments?  
24  
25 **VANCE VINCENTE:** On the second page at the top, the SSC also  
26 discussed the need for socioeconomic impact assessment in the  
27 U.S. Caribbean and maybe we should add in relation to the  
28 implementation of fisheries regulations? I think we should be  
29 specific on what and maybe in relation to the implementation of  
30 new fisheries regulations or maybe, Mike, you have a better way  
31 of stating it.  
32  
33 **MIGUEL DEL POZO:** Based on the discussion we had here, it was  
34 basically about the ACL impact.  
35  
36 **VANCE VINCENTE:** I want to make it even more general, because we  
37 refer to the final environmental impact statement of essential  
38 fish habitat and it also applies there and it should apply to  
39 any new upcoming regulations.  
40  
41 **BARBARA KOJIS:** Any other comments or corrections? Okay. I'll  
42 give you a couple more minutes.  
43  
44 **VANCE VINCENTE:** I would also say including the distance from  
45 shore and depth and habitat type. We need to add depth.  
46  
47 **BARBARA KOJIS:** Are there any other corrections or comments from  
48 any of these? Do we have a consensus that this should be the

1 report to the Caribbean Fishery Management Council for these  
2 topics? Any objections? Okay. I think that's the final topics  
3 for the meeting. Does anybody have any other business that they  
4 would like to bring up at the meeting at this time?

5  
6 **OTHER BUSINESS**

7  
8 **GRACIELA GARCIA-MOLINER:** For the SEDAR-26, the queen snapper,  
9 silk snapper, and redbtail parrotfish, the final review  
10 manuscript should be out sometime around December and so that  
11 will become available for peer review by the SSC before it's  
12 presented to the council and so as soon as we have that, then  
13 we'll distribute it for your comments and there might be an SSC  
14 meeting to review the assessment, the reviewer's assessment  
15 product.

16  
17 **BARBARA KOJIS:** Do you know when that meeting might be?

18  
19 **GRACIELA GARCIA-MOLINER:** The council meeting is in December and  
20 so usually it's every three to four months and so some time in  
21 February, probably.

22  
23 **BARBARA KOJIS:** Okay. If there's no other business and we have  
24 an idea of when the next meeting will be, which will probably be  
25 February some time -- I have a question. Does the SSC want to  
26 make any recommendations to the council regarding coming up with  
27 meeting dates at least six months in advance?

28  
29 Is there any interest in trying to get a more advanced schedule,  
30 so that we can make sure that we get people like the DPNR Fish  
31 and Wildlife, who has restrictions, as well as for our own  
32 schedules? If not, I'll just mention it at the meeting, the  
33 CFMC meeting, that we did not have an attendance from DPNR Fish  
34 and Wildlife, in part because of the difficulty for them to  
35 travel because of the advance notice that's needed.

36  
37 Anyway, if there's no other topics of discussion or what have  
38 you, we'll adjourn this meeting and thank you very much for all  
39 of you attending. I appreciate all your input and assistance  
40 and I would like to especially thank Mike Sissenwine for  
41 providing the reports for yesterday and this morning. Thank you  
42 very much.

43  
44 (Whereupon, the meeting adjourned on November 16, 2011.)

45  
46 - - -