

1                                   **CARIBBEAN FISHERY MANAGEMENT COUNCIL**  
2                                   **SCIENTIFIC AND STATISTICAL COMMITTEE MEETING**  
3                                   **El Conquistador Hotel**  
4                                   **Fajardo, Puerto Rico**

5  
6                                   **AUGUST 27-28, 2012**  
7

8   The Scientific and Statistical Committee of the Caribbean  
9   Fishery Management Council convened at the El Conquistador  
10  Hotel, Fajardo, Puerto Rico, Monday morning, August 27, 2012,  
11  and was called to order at 9:10 o'clock a.m. by Chairman Barbara  
12  Kojis.

13  
14  **BARBARA KOJIS:** Good morning, everybody. This is the Scientific  
15  and Statistical Committee meeting for the Caribbean Fishery  
16  Management Council. It's August 27 and the time we're starting  
17  is about ten past nine. I would just like to welcome everybody  
18  and thank you for coming.

19  
20  Just a couple of things, before I forget. One of them is make  
21  sure you turn off your cell phones and the other is a couple of  
22  things that Iris asked me to relay to you. Make sure you state  
23  your names when speaking for the record. I will also try to  
24  call out your name so that that will help in the transcriber  
25  knowing who is speaking. Hopefully it will be fairly clear when  
26  I'm speaking.

27  
28  I won't say my name all the time, because that might be too  
29  frequent, but I think I'm the only woman, besides Graciela, and  
30  Graciela has a little Hispanic accent and so we should be able  
31  to be distinguished and so the transcriber should know I'm  
32  Barbara Kojis and so this is what my voice sounds like.

33  
34  One other thing Iris asked me to tell you is that the final  
35  decisions or important decisions need to be said loud for the  
36  record and so it's the same thing as every time, but it's hard  
37  to remember, I know, but try to say your name first.

38  
39  I would also like to mention that make sure that you sign the  
40  attendance sheet that has gone around. I think, Iris, is there  
41  anybody you don't have yet?

42  
43  **IRIS OLIVERAS:** No.

44  
45  **BARBARA KOJIS:** Everybody has signed that. That's great. Then  
46  I would like to go around and take a roll call and if I could  
47  start with Miguel.

1 **MIGUEL ROLON:** Miguel Rolon, council staff.  
2  
3 **CARLOS FARCHETTE:** Carlos Farchette, council chair.  
4  
5 **TODD GEDAMKE:** Todd Gedamke, Southeast Fisheries Science Center.  
6  
7 **JORGE GARCIA-SAIS:** Reni Garcia, SSC member.  
8  
9 **BARBARA KOJIS:** Barbara Kojis, SSC chair.  
10  
11 **RICHARD APPELDOORN:** Rich Appeldoorn, SSC member.  
12  
13 **MIGUEL DEL POZO:** Miguel del Pozo, SSC member.  
14  
15 **BILL ARNOLD:** Bill Arnold, Southeast Regional Office.  
16  
17 **GRACIELA GARCIA-MOLINER:** Graciela Garcia-Moliner, council  
18 staff.  
19  
20 **IRIS OLIVERAS:** Iris Oliveras, council staff.  
21

#### 22 **ADOPTION OF AGENDA**

23  
24 **BARBARA KOJIS:** Thank you very much. The next item on the  
25 agenda is the Adoption of the Agenda. Are there any comments  
26 about the agenda, any additional information that you need put  
27 on the agenda? We need a motion to adopt the agenda.  
28  
29 **RICHARD APPELDOORN:** Motion to adopt the agenda.  
30  
31 **BARBARA KOJIS:** Is there a second?  
32  
33 **JORGE GARCIA-SAIS:** Second.  
34  
35 **BARBARA KOJIS:** Rich Appeldoorn made the motion and Reni Garcia  
36 seconded the motion. Is everybody in favor? Thank you.  
37  
38 **TODD GEDAMKE:** Just on the agenda, it seems a little more formal  
39 than Todd normally is with these sort of things, but the agenda  
40 item is really to look at the five-year research priorities.  
41  
42 If I remember correctly, this was actually an agenda item from  
43 the last SSC meeting that we had gotten together and discussed  
44 for a little while and I believe that we can have further  
45 discussion and so I'm not opposing this motion at all, but I  
46 just think that in our discussion the conclusions from the SSC  
47 and the recommendation the last time we discussed this were to  
48 put together a working group to draft a research plan, which the

1 SSC would then review that plan and make recommendations from  
2 that.

3  
4 I think that part of that discussion was that rather than us sit  
5 around in a room in a very hurried sense to try to put together  
6 some pieces that we would have this put together in a multistep  
7 process and the most efficient use of our time would be to work  
8 off of some strawman or draft item.

9  
10 As we get into discussions, I would like a little update of what  
11 happened with that process, because I haven't seen a draft  
12 research plan at this point and that's where I thought we were  
13 the last time we ended this discussion as the SSC.

14  
15 **BARBARA KOJIS:** For the most part during this, we will not be  
16 making motions, but I thought for adopting the agenda we would.  
17 We won't be voting, but it will be consensus opinion on these  
18 things.

19  
20 **MIGUEL ROLON:** Let me explain why you're here and where we are.  
21 It is a mandate now, as some of you know, under the Magnuson Act  
22 that each council prepares a five-year research plan.

23  
24 The SSC, the last time that you discussed this, you were more or  
25 less addressing all the issues necessary for the ACLs and all  
26 the other FMPs that we have and you outlined several items  
27 regarding research that you wanted made and you also asked for  
28 the subcommittee to make.

29  
30 We found that the subcommittee will be you guys and two people  
31 from Puerto Rico or one from Puerto Rico and from the Virgin  
32 Islands. At this time, the idea of meeting you again is that we  
33 want to review -- Graciela has the document from SEDAR and all  
34 the others that came after the June meeting and see if we can  
35 put together an outline of the five-year research plan.

36  
37 Then that outline will be presented by Barbara on Tuesday, but  
38 the actual plan will be reviewed by the SSC again in November  
39 and in between here and November, we want to take that to the  
40 local governments, and the Southeast Fisheries Science Center,  
41 of course, to see what we can do and prioritize it.

42  
43 Also, as a spinoff from those meetings, we have two proposals,  
44 because we were addressing issues regarding the biological  
45 aspects of the fisheries within the management units and we also  
46 wanted to know if we could get a better handle of the species  
47 that we have, so we will determine where we are in terms of the  
48 ACLs.

1  
2 There are two proposals addressing that, one from the two local  
3 fishermen's associations in the USVI, led by their PI, which is  
4 David Olsen, and another one by Dr. Richard Appeldoorn et al.,  
5 which is addressing the issue of the spawning aggregation of  
6 some of the groupers, especially Nassau and the others. This  
7 will be incorporated into this exercise.

8  
9 The council needs to finish this by December and that will be  
10 our five-year research plan that we are going to submit. We did  
11 one some years ago and we reviewed it and by the way, one of the  
12 problems with the research plan is that we don't have any money  
13 for it. It's a wish list for the eight councils.

14  
15 Now, because of the ACLs, we are waiting to see what happens.  
16 All the eight councils have some extra funding and so after  
17 today and the half-day tomorrow, if you can address a couple of  
18 priorities that you see as an immediate need, then the council  
19 and the Center will work together to see if we can put some  
20 money into those research priorities and see if we can do it by  
21 2012, 2013, or 2014. That's about it. Then I will be coming in  
22 and out, because we're doing something else, but that's  
23 basically what we wanted to do today.

24  
25 **TODD GEDAMKE:** Did I just hear right that what we are coming up  
26 with in the next few hours will be presented to the council  
27 tomorrow?

28  
29 **MIGUEL ROLON:** Mostly an outline. We don't pretend to have a  
30 full-fledged plan, but an outline so the council has at least an  
31 idea.

32  
33 **TODD GEDAMKE:** I think there was definitely some strong voices  
34 at the last meeting that something as important as a five-year  
35 research plan, putting it together during a meeting, during one  
36 of the briefer sessions, is -- It would be much better to do it  
37 in a longer process. I understand we're under the gun, but I  
38 just wanted to re-raise that point.

39  
40 **BARBARA KOJIS:** One of the things is we do have the period  
41 between this meeting and the next and I think that that may be  
42 an opportunity for the ad hoc committee, if we see a need for  
43 it, to get together to flesh out the five-year research  
44 priorities.

45  
46 I just want to mention one thing about this. These are research  
47 priorities and I think a plan, the idea of putting together a  
48 plan, is -- This is what the Western Pacific -- This document,

1 when they talk about research, they're talking about research  
2 priorities rather than a plan, per se, and the question is do we  
3 want to put together a plan?

4  
5 A plan would be very different and focusing on a narrower group  
6 of things, I guess, and saying this is what we want to get done  
7 in five years versus these are what the priorities are for  
8 research.

9  
10 **MIGUEL ROLON:** That's exactly it and that's what we're saying to  
11 you, that we want to see if we can develop some priorities,  
12 similar to the Western Pacific, and then once we have that, then  
13 a team of people will sit down and take those priorities and  
14 make it into a plan, because the priorities of what's in the  
15 plan is really how you're going to do it and who is going to be  
16 involved, the money involved, and all that.

17  
18 We believe that we need to have three or four or five months to  
19 actually write the management plan. In the past, we just had a  
20 wish list and sent it out, but that doesn't cut it anymore and  
21 especially now that we have a scarcity of funding expected in  
22 2013 and 2014.

23  
24 We want to make sure that our five-year plan will respond to  
25 that and that's why today and tomorrow what we need to have is  
26 the first part of the plan, which are the priorities, just a  
27 list of the priorities as you see it.

28  
29 Most of the priorities you already have discussed in SEDAR and  
30 other documents and that's why I asked Graciela to pull out  
31 everything that we had in the past.

32  
33 One thing that people are telling us is that we are not  
34 considering socioeconomics or social science and we are  
35 concentrating too much on the biology of it and that's why,  
36 Miguel, we want to hear from you also. What are the things that  
37 the social scientists see as a priority for both Puerto Rico and  
38 the Virgin Islands?

39  
40 Also, the economy, I believe Walter will be addressing that  
41 through the phone or he can address it some other time, but we  
42 need to divide the priorities between biological, social, and  
43 economic or economic and social.

44  
45 **BARBARA KOJIS:** I think it needs to be clarified for everybody.  
46 During this meeting, we're going to be more or less looking at  
47 priorities and during the next meeting then, and in between this  
48 meeting and the next, come up with a research plan that would be

1 very specific as to what needs to be done in the next five  
2 years, along with funding and the people who are going to be  
3 involved?

4  
5 **MIGUEL ROLON:** In between here and the next one, we are going to  
6 have two meetings. I need to meet with some key people from the  
7 Center and the local governments and some of the universities  
8 and we will look at the possibility of writing a one-page or  
9 half-a-page of those research needs and how can we do it and all  
10 of that. That will constitute the plan.

11  
12 I asked for some guidance as to how they want to see the five-  
13 year plan written and they said it's up to you. Each area will  
14 develop their own plan as you see fit and also, Dr. Roy Crabtree  
15 and I discussed another meeting that we need and it will be in  
16 between here and December and it is the meeting to address the  
17 ACLs for those species that have a trend of -- If the trend  
18 continues, it will go over the ACL.

19  
20 That group needs to address whether that's an artifact of the  
21 way that we are collecting the data now or it's a real trend and  
22 we need to combine those two meetings between here and December.  
23 I know it's a lot, but we need to have a subcommittee to address  
24 that and then present it to the SSC at the meeting in November.

25  
26 Of course, the five-year plan, if we flesh out something among  
27 the priorities that you're going to be developing between here  
28 and tomorrow, then that committee will also put it together.

29  
30 **BARBARA KOJIS:** There appears to be a lot of important tasks to  
31 get done in this timeframe. I have one other question while  
32 you're still here, Miguel. This five-year research priorities,  
33 did the Western Pacific Regional Fishery Management Council also  
34 come up with a research plan or is this all that they came up  
35 with?

36  
37 **MIGUEL ROLON:** That's what they have, but it is -- The intent is  
38 to have the research plan and this is the matter. Some people  
39 just want to scratch the name and change it from "priority" to  
40 "research plan" and I personally believe that's not a research  
41 plan, because a research plan would have more into it.

42  
43 Let me give you why we are doing this, an idea that we have.  
44 Right now, we have three proposals that the council is  
45 addressing and the proposal falls into the umbrella of the  
46 research that we need here, but with a research plan, once I  
47 have that and I have an A, B, C, D, E of things that want to do  
48 and how we're going to do it, I will take that to the public for

1 a bidding process and then I can get the project going and we  
2 intend to do that by 2013 and 2014.

3  
4 The last year of this five-year cycle is 2014 and so the five-  
5 year plan would be straddling into two year cycles, between here  
6 and 2014 and then 2015 through 2020.

7  
8 **BARBARA KOJIS:** I didn't exactly understand. You said that the  
9 -- It sounded like the plan was supposed to cover seven years  
10 then, this two-year period between --

11  
12 **MIGUEL ROLON:** The plan will cover only five, which is expected,  
13 but I don't think that everything that you will write in that  
14 plan, even the priorities, we will be able to cover in five  
15 years and so we have to revisit this at the end of the five-year  
16 cycle, but the budget cycle is not in the same phase and that's  
17 what I'm saying.

18  
19 **BARBARA KOJIS:** This plan should cover the years from 2013 to  
20 2018?

21  
22 **MIGUEL ROLON:** Yes.

23  
24 **BARBARA KOJIS:** Okay. We still have the agenda and does anybody  
25 want to just -- We've got a motion and we've got a second for  
26 the adoption of the agenda and could everybody indicate aye or  
27 nay. Did we already vote? Okay. Thank you.

28  
29 Let me go back to the agenda. The purpose of this meeting then  
30 is going to be to draft a five-year research priorities, an  
31 outline of the five-year research priorities, for the Caribbean  
32 Fishery Management Council.

33  
34 There were a number of documents sent to you and I listed some  
35 of them in the agenda and there were more that I sent out. If  
36 you haven't checked your email in the last twenty-four hours,  
37 there is an email with all the documents that I think I received  
38 that's in there or I think there were something like twelve  
39 documents. Has everybody received those? It's online and it  
40 was in SkyDrive, I believe, that I sent them.

41  
42 I see this, moving forward with this, by doing two steps and  
43 this is the way it was kind of outlined in the agenda. It was a  
44 discussion of the overall research focus, broad research  
45 questions, and I gave a couple of questions there that I just  
46 had on the top of my head, but I see us going through and  
47 looking at those research questions that are of targeted  
48 importance right now and then discussing whether the DPRMC

1 format is appropriate for the priorities and obviously, after  
2 our discussion with Miguel, we need a research plan eventually,  
3 but at this stage we're looking at priorities and then we'll  
4 draft the recommendations for five-year research priorities.

5  
6 Does everybody think that that's a good plan? It's in the  
7 agenda and I assume that when you approved the agenda that you  
8 thought so, but do you think that's a good way of going forward  
9 with this?

10  
11 **DISCUSSION OF FIVE-YEAR RESEARCH PLAN**

12  
13 **TODD GEDAMKE:** I think it's an immense challenge, which I've  
14 already stated. I think that maybe a starting point, rather  
15 than starting from things that we jotted down from the top of  
16 our head quickly, is a five-year research priority plan is  
17 trying to get us to a certain place five years from now.

18  
19 Maybe if we could try to tie in some of the bigger-picture  
20 questions that we are really focusing on. My fear with this,  
21 and I think that the points that were raised last time, is us  
22 getting really into the weeds on very specific aspects of  
23 research that could be conducted.

24  
25 If we can broaden ourselves out a little bit to in five years  
26 from now we would like to be able to inform management by doing  
27 1, 2, 3, and 4. Just the note to myself really was if we can  
28 focus on the outline, the broader concepts, rather than really  
29 getting to anything specific, I think it would be more helpful  
30 at this point, because we could spend a lot of time discussing  
31 narrow aspects of this.

32  
33 Just to bring it back to my broadest comment, where do we want  
34 to be in five years on this? I think that's really the  
35 overarching question for this research priority plan.

36  
37 Me, I would love to have all of the problems solved, but in a  
38 realistic world, what can we accomplish in five years and what  
39 should we be shooting for? What are our short-term goals that  
40 are part of this five-year plan that we will accomplish within  
41 five years and what goals within this are a groundwork for the  
42 much larger questions, which we'll take outside of that five-  
43 year plan.

44  
45 Miguel or anyone else that may have guidance as to whether we  
46 should be just thinking about the short term or thinking about  
47 the longer beyond five years, that would be helpful.



1 **MIGUEL ROLON:** I think both. The present problem that we have  
2 is we don't know where we are in terms of the ACLs. We also  
3 have a list of -- Actually, Todd discussed it in one  
4 presentation that you gave to the council, which is a list of  
5 things that we need to strengthen the models that we use.

6  
7 For example, we do not know a lot about the biological  
8 parameters of the species that we're trying to manage here, the  
9 length, growth curve, all that. We have it for some species,  
10 but for the majority, we're lacking that information.

11  
12 Other people want us also to move into ecosystem-based  
13 management, whatever that is, and they want to have  
14 predator/prey relationships, because we don't have predator/prey  
15 relationships, a decent database, for the Southeast Region.

16  
17 I believe that we need to go through probably what Graciela had,  
18 but the immediate priority will be where are we in terms of the  
19 ACLs and do we have information that can show the managers where  
20 we are? If we do not, what do we need to collect?

21  
22 In the previous discussions also with the SSC, you were talking  
23 about validating some of the data that you have and, Todd, you  
24 recommended a study where we have an observer on some of the  
25 vessels and get the information back and everybody agreed with  
26 that, but they didn't move one bit.

27  
28 I asked the Regional Office and we asked the Southeast Fisheries  
29 Science Center and they said yes, that's a good idea, but we  
30 cannot do it right now and so we need to have some immediate  
31 practical things and then in the long term where we want to be.

32  
33 I believe that where the council needs to be in the next,  
34 actually at the end of 2013, is they need to know, for the  
35 species groups that are undergoing overfishing or are  
36 overfished, we need to know where we are in terms of the ACLs  
37 and those leads that you already have and Graciela can pull it  
38 out at any time.

39  
40 Do we have enough information for the spiny lobster, for the red  
41 hind, for the Snapper Grouper Complex 1? Those are the kinds of  
42 that we call a top priority. The parameters that we need to  
43 address or we need to study, that's a question that we ask the  
44 SSC.

45  
46 **BARBARA KOJIS:** You mentioned where we are with respect to the  
47 ACLs and what do you mean? Do you mean in terms of keeping  
48 track of how much fishermen are catching or do you mean in terms

1 of really what the status of the stocks are or what are you  
2 referring to?

3  
4 **MIGUEL ROLON:** Again, it's both, but right now, and probably  
5 Bill can address this, so you have a flavor of what is  
6 happening, but Daniel Matos from Puerto Rico is saying that he  
7 didn't have time to submit all the information for 2010 or 2011  
8 to the Southeast Fisheries Science Center, yet the Regional  
9 Office has a table where it shows that trends are that we are  
10 going to go over the ACL limit for certain species that we have.

11  
12 Dr. Roy Crabtree will be addressing this at the meeting. We are  
13 going to have a special meeting of scientists with the local  
14 governments to see is that -- As I mentioned before, is that an  
15 artifact of the way that we are collecting the information now  
16 or is it a real trend?

17  
18 The implications, social and political implications, are great,  
19 because right now, I have a Senator who came to the public  
20 hearing asking the fishermen not to give any information until  
21 we put all the dots and the I's about the way that we collect  
22 the information.

23  
24 I told him aside if you do that then the information from the  
25 Virgin Islands will be zero and we don't know where we are and  
26 we have to be precautionary and therefore, we're going to close  
27 the EEZ and he didn't see that.

28  
29 Bill, can you tell us more or less where we are with that table,  
30 so they have any idea of what happened and where you get that  
31 information for the ACLs?

32  
33 **BILL ARNOLD:** We get our landings data from the Southeast  
34 Fisheries Science Center and they get it from the local  
35 governments and we use those numbers to add up what the annual  
36 total is for the years of interest and they differ depending  
37 upon the species we're talking about and the islands we're  
38 talking about.

39  
40 It's a pretty cut-and-dried process to compare it to the ACL and  
41 just see where we are relative to the ACLs. There were a couple  
42 that were over and like I said, it depends upon the year you're  
43 using.

44  
45 For example, for the 2010 species, those species designated as  
46 undergoing overfishing, we can use the 2010 and 2011 landings  
47 years for Puerto Rico, because we have those data and because  
48 the regulations have the 2010 monitoring -- The monitoring of

1 the 2010 species, the undergoing overfishing species, begins  
2 with the year 2010.

3  
4 Using those data and averaging over 2010 and 2011 for Puerto  
5 Rico, I know that Snapper Unit 1 and Snapper Unit 2 are over.  
6 I've got the table. I don't have it up, but there's a couple  
7 others that are over and not quite as much, but Snapper Unit 2  
8 is over substantially and so that's a situation there.

9  
10 For the species that were not designated as undergoing  
11 overfishing, the regulations call for us beginning in 2011 and  
12 so we're only using the 2011 Puerto Rico data to monitor those  
13 species. I think there's one or two of those. Jacks are over  
14 somewhat substantially and maybe a couple of others, wrasses,  
15 but the wrasses are over -- It doesn't take much to go over the  
16 wrasses, because there's not a very high ACL on them.

17  
18 Now we start talking about the U.S. Virgin Islands and we don't  
19 have the USVI data yet and so for the species that are  
20 designated as undergoing overfishing, and those are snapper  
21 grouper, parrotfish, and queen conch, we use only the 2010 data  
22 and there's no averaging.

23  
24 For all those species that weren't designated as undergoing  
25 overfishing for which we don't have 2011 data yet, we can't do  
26 anything with the ACLs. We will have to wait until next year,  
27 when we actually get the 2011 data. That's kind of where we are  
28 on this. I can put the table up, but that's not really going to  
29 help much.

30  
31 As far as the status of the data is concerned, I think the  
32 Science Center kind of felt like they pretty much got the data  
33 for 2010 and 2011 and I can't imagine they don't have the data  
34 for 2010 from Puerto Rico or the USVI. This data needs to be in  
35 by the middle of 2012.

36  
37 I don't know what those data are going to say, but I would  
38 assume that if you have more reports coming in and more data  
39 being added that it's only going to drive those landings up and  
40 there's not going to be any negative landings coming in to drive  
41 landings down and so we're going to have to deal with ACL  
42 overages.

43  
44 The SSC is going to have to deal with evaluating, as called for  
45 in the amendments, whether those overages are due to increased  
46 landings or increased reporting or whatever and that's pretty  
47 much where we are with those ACLs and the landings relative to  
48 those ACLs.

1  
2 **GRACIELA GARCIA-MOLINER:** I talked to Daniel Matos recently and  
3 the problem is that the Secretary of Natural Resources opened  
4 the doors for people who had not submitted reports before to  
5 submit them now and so he still has 2010 and 2011 records that  
6 need to go online.

7  
8 As far as the way that he used to do business, which was there  
9 was a cutoff date and if you didn't submit by then, then that  
10 data didn't get entered, now there has been a door opened for  
11 more records to come in and that brings us to another problem,  
12 which is were those records really written at the time when they  
13 were harvesting the fish or were they written at the time when  
14 the Secretary said you can submit the records now?

15  
16 He's in the process of evaluating that data that are coming in  
17 and his first instinct was to not accept anything from 2008 and  
18 2009 and he might even go to 2010 and so he has them. He has  
19 the records, but they might or might not come into the data  
20 line.

21  
22 **BARBARA KOJIS:** My understanding is that he may be including  
23 2010 data that's come in late, but the 2008 and 2009 he hasn't  
24 and that means that the 2010 catch would probably be higher than  
25 2008 and 2009, just based on the fact that fishermen -- He  
26 didn't include late reports in the previous years. How do we  
27 address that?

28  
29 **GRACIELA GARCIA-MOLINER:** The word he used was that there was an  
30 avalanche of records coming in. I am quoting.

31  
32 **BARBARA KOJIS:** Those records go back to 2008 that were coming  
33 in and this was because they require all the records in in order  
34 to get your commercial fishing license again or why are the  
35 fishermen turning it in now?

36  
37 **GRACIELA GARCIA-MOLINER:** His only comment was that the  
38 Secretary of Natural Resources told the fishermen that they  
39 could submit the old reports that they had.

40  
41 **BARBARA KOJIS:** They aren't required to turn in their reports  
42 for their licenses?

43  
44 **GRACIELA GARCIA-MOLINER:** They are required to turn in the  
45 reports and they used to be required to submit it over a sixty-  
46 day period after the time of the harvest and that would be it.  
47 Anything that came after those sixty days would not be included.

48

1 **TODD GEDAMKE:** We're getting into years of data recording. For  
2 research priorities, I would like to throw out that the number  
3 one research priority is we've got to get a handle on landings.  
4 We can phrase this however we want and we can put it however we  
5 want, but the number one thing that has to get done is we need  
6 better information on landings.

7  
8 What is going to come up with these overages is the ability for  
9 us to evaluate whether there have been changes in reporting and  
10 I think that some of the points made here -- They're not  
11 directly related to research priorities, but being able to  
12 evaluate those changes.

13  
14 It's going to be the council's decision as to how they would  
15 like to proceed with this, but the Center is going to have to  
16 put together a report and I would imagine that it's going to  
17 have to come back to the SSC and so that's something we all need  
18 to keep in the back of our heads for up and coming.

19  
20 Just in terms of research priorities, in terms of an outline, we  
21 need to get landings. Landings need to get validated from on  
22 the ground and we need to speed up reporting rates and so the  
23 question that I would have for the most efficient way for us to  
24 go through our day would be for something like this.

25  
26 Do we want to stick to broader topics, such as we know landings  
27 are a problem? I have a TIP -- Improving the frequency of TIP  
28 sampling and as Miguel mentioned, length or age/growth maturity.  
29 Do we want to use this to come up with the most broad outline,  
30 the big Roman numerals, and then revisit them, so that we're all  
31 on the same page where this whole document is going? That's  
32 just a thought for how to structure it.

33  
34 Just for the record, I apologize that I'm going to have to step  
35 out of the room for fifteen or twenty minutes in about ten  
36 minutes and so I apologize and I will be back in as soon as  
37 possible.

38  
39 **BARBARA KOJIS:** Any comments on Todd's suggestion? I have a  
40 question. Where are we with TIP sampling? Has the frequency of  
41 sampling been increasing and is it needed to increase on Puerto  
42 Rico and the Virgin Islands? Do you have any information on  
43 that, Bill?

44  
45 **BILL ARNOLD:** I would defer to Todd on where we are with the  
46 TIP.

47  
48 **TODD GEDAMKE:** I just threw it out there because that's -- I am

1 going to hammer at that one, too. If I have a top priority list  
2 for us to look at research priorities, the broadest things to  
3 assist in management are going to be landings and TIP sampling  
4 and as far as I know, the frequency has not increased and  
5 underlying that, in many of the discussions we had before, the  
6 design of how those TIP samples is also critically important.

7  
8 Improvements in the quality of landings information, validation  
9 of the landings information, would be my Roman numeral I and  
10 Roman numeral II would be TIP information and that would be  
11 increased TIP sampling and improved sampling strategy.

12  
13 **BARBARA KOJIS:** As I recall, we've been talking about this for a  
14 long time and Bob Trumble also did a document on what was needed  
15 and the cost of doing that sort of thing. What has come from  
16 that?

17  
18 **TODD GEDAMKE:** This is my probably third SSC meeting where  
19 Barbara has put me on the spot asking me this question and I  
20 have not successfully provided a useful answer to this. The  
21 Southeast Center has been working on evaluating the plan, but as  
22 Miguel alluded earlier with the budget constraints that have  
23 been popping up in the previous couple of years, the plan has  
24 gone from this extremely large plan to paring down to something  
25 that we can actually move forward with.

26  
27 Right now, that plan, Nancie Cummings has consolidated that into  
28 a much shorter version, so that the powers that be above with  
29 the purse strings can take a look at it, but that is now above  
30 my pay scale and I am not sure where that stands, but the plan  
31 has not died. It is just in evaluation stage at the upper  
32 levels. Bill seems like he might have insights.

33  
34 **BILL ARNOLD:** I just had a question for Todd and he may not be  
35 able to answer this. Is she putting that together in a  
36 hierarchal fashion, so that if you only got a certain amount of  
37 funds or if we wanted to pursue a chunk of funds that we could  
38 say here's what we need to fund and then kind of walk through it  
39 like that instead of just one big blob of needs?

40  
41 **TODD GEDAMKE:** Yes, the plan -- Before we started discussing it,  
42 one of the primary things for structuring our conversations was  
43 that it would be scalable. If we had \$10 million, we would be  
44 able to do this and if we came with \$2 million, we would be able  
45 to do these other pieces.

46  
47 It was very scalable and it's set up and these same research  
48 priorities, in terms of landings that we're discussing, are the

1 number one part of that plan too, which would be to get more  
2 people on the ground and do validation. Yes, Bill, it is  
3 scalable and I'm not sure what we -- There was a minimum level  
4 of needs that was included and then it went from there to the  
5 ideal or the dream.

6  
7 **BILL ARNOLD:** Todd, just to answer Barbara's question, there's  
8 no reason to think that TIP has improved any since we've been  
9 over all this stuff, is there?

10  
11 **TODD GEDAMKE:** As far as I know, TIP is continuing as in the  
12 past. In St. Thomas, the fishermen are still calling to have  
13 someone show up and sample their boat when they want to be  
14 sampled. It violates all assumptions of randomness, period.

15  
16 The quantity of samples has tailed off. There's one or two  
17 places that they have been picking up a few more samples, but  
18 nothing significant and so the overall pattern of declining  
19 number of samples exists and so no, I don't think there's any  
20 changes or any significant push from that end and I think that  
21 that needs to get a very strong recommendation from our part in  
22 terms of improving the frequency and also pushing at the Center  
23 to get that sampling plan on the ground so that the territories  
24 have guidance as to how to do the sampling and that will be very  
25 helpful.

26  
27 **RICHARD APPELDOORN:** Just so I can grab Todd before he goes, if  
28 I understood correctly your 1, 2, and 3, the first one --  
29 Overall, you're saying we need data, which I'm not necessarily  
30 sure is a research need, since supposedly we have programs, and  
31 perhaps they're not working well, but we have programs to do  
32 that.

33  
34 As I understood from your first Number 1 about the landings  
35 data, the research question that I got out of that is we need to  
36 know whether these are valid or not and so we need a validation  
37 aspect of that.

38  
39 I understand the age/length maturity issue, which was your  
40 Number 3, I think, and I didn't get what the research question  
41 would be about the TIP, other than why isn't it working.

42  
43 **TODD GEDAMKE:** I don't have any research questions. I am  
44 looking at research priorities. I am looking at areas that we  
45 are lacking information to draw any conclusions and I just threw  
46 out maturity and age and growth to give you a feel in kind of my  
47 comments there.

48

1 I would not -- I think those need to be up for discussion and  
2 for the landings and the validation and the TIP sampling, in  
3 terms of the U.S. Caribbean and us providing guidance as to what  
4 research -- I agree with you, Richard, that these are things  
5 that we shouldn't have to be discussing.

6  
7 These are things that should be on the ground being collected as  
8 part of the fishery as opposed to some accessory research which  
9 augments the information that already exists, but I believe  
10 that, considering that we're still sitting discussing really  
11 uncertain landings values, I think it's very important for us to  
12 make that as a strong recommendation for those. That's  
13 landings.

14  
15 The question for TIP is that is your fundamental data collection  
16 that feeds into many of the methods which will give us  
17 information in the short term and so once again, it's not  
18 exactly a research question, but I think a very strong  
19 recommendation that if we're going to move forward and be able  
20 to provide managers with advice that TIP is going to be the  
21 mechanism, one of the early mechanisms, to get that done.

22  
23 Then I just put out maturity, length, and age and growth as kind  
24 of some of the other bigger categories or the finest type of  
25 categories that I think we should really get ourselves into in  
26 this discussion, because the first two seem very easy to me.

27  
28 **RICHARD APPELDOORN:** Where does recreational data come into  
29 this?

30  
31 **TODD GEDAMKE:** That's another one and I agree that recreational  
32 information -- Number one and that's good and that's exactly the  
33 type of thing that I'm trying to get across is that recreational  
34 -- Improved information on recreational and surveys and that  
35 type of -- We could put those as bulleted headings and once we  
36 can work out a prioritized list of these pieces, then someone  
37 else can spend a good bit of time fleshing out exactly how the  
38 details of this, prior to the next SSC meeting.

39  
40 I think we're on the same page, but I just fear that we will get  
41 into too many details on some of these aspects and I think the  
42 most important thing for us as a group is not to really write  
43 down that we're going to study fin clips of a certain species,  
44 but rather that we need more information on this aspect of the  
45 fishery, these bigger areas. I apologize, but I will be back in  
46 about twenty minutes.

47  
48 **JORGE GARCIA-SAIS:** I just want to point out an issue here that



1 I have been seeing recently on the coastlines of Puerto Rico and  
2 that's been like what I consider a collapse of the fishing  
3 effort and that's why I am kind of concerned about when we refer  
4 to a fishery in terms of landings, because we've been using  
5 these landings, annual landings data, as a proxy for MSY and I  
6 consider that there are major trends that may be affecting our  
7 ability to predict the status and management of fisheries based  
8 on just landings data.

9  
10 Right now, there has been an influx, a great influx, of the  
11 marketing of tilapia and basa fish into our markets and I think  
12 that that has influenced a lot the collapse of the fishing  
13 effort in many places around Puerto Rico.

14  
15 I can personally see it from la Parguera. We are not seeing  
16 fish traps in the water and we're not seeing fishermen selling  
17 fish and so I don't know. I don't know if we should be  
18 weighting the landings data in terms of the fishing effort more  
19 than we have ever done, since I believe that we are actually  
20 living on a trend of high variations in terms of the fishing  
21 effort.

22  
23 I agree also with the comment about the recreational fisheries.  
24 I am very concerned that in terms of fisheries management that  
25 we have such a huge, large correction factor to weight in the  
26 recreational fishing effort and landings and we have very few  
27 data on the recreational landings and effort as well.

28  
29 **BARBARA KOJIS:** Just one question. You said tilapia and bass?

30  
31 **JORGE GARCIA-SAIS:** Basa. It's a catfish. What I've seen is an  
32 invasion of the marketing in all the supermarkets and  
33 everywhere. Restaurants are using it now and it's amazing. You  
34 ask for the -- They sell you now grouper for -- When you're  
35 think that you're eating grouper, you're eating catfish and  
36 they're getting it a very cheap price. The market is overloaded  
37 with this thing. The fishermen, there is no demand.

38  
39 **BARBARA KOJIS:** Is this locally produced?

40  
41 **JORGE GARCIA-SAIS:** No, it's imported, mostly. It's mostly  
42 imported. They are actually developing some aquaculture  
43 initiatives here in Puerto Rico for that thing, but it's  
44 actually mostly coming from elsewhere. It's imported.

45  
46 **BILL ARNOLD:** This goes back to the exchange between Rich and  
47 Todd and I just wanted a clarification. Do we want to focus on  
48 research priorities or funding priorities? I think the

1 distinction is important.

2  
3 **MIGUEL ROLON:** We need to focus, as an SSC and a group, just on  
4 research priorities. Just tell us what is needed to do the work  
5 and the let the council and the others fight for the money where  
6 they need it.

7  
8 You've been discussing the landings and I believe that the  
9 consensus around the table is that's probably the number one  
10 issue and then we need to see, as they did in the Western  
11 Pacific, around landings is what will be the priorities? Is it  
12 validation of the data that we have now or look at the  
13 parameters that we are collecting? Do we have enough or not for  
14 the ACLs?

15  
16 That is the kind of thing that we need from the group and  
17 following the example, once we have that priority, I need to  
18 convey it to a group of people that will look at it and that's  
19 when I need to ask Daniel and Roy Pemberton why this information  
20 is behaving the way it is behaving and do you need to collect  
21 better information, et cetera, et cetera?

22  
23 For example, I have been discussing this with Bonnie Ponwith and  
24 she believes that that's one of the number one issues that the  
25 Center will be addressing and we need to expand the scope of the  
26 data collection that we have and she has some ideas that she  
27 might present to the council in December.

28  
29 **BARBARA KOJIS:** One of the areas that pertain to ACLs and all  
30 the issues around it that may be a more research question that  
31 you might want a master's degree or a PhD student to work on is  
32 just whether these things can be successful, given the situation  
33 in Puerto Rico and the Virgin Islands.

34  
35 We're expecting information to be collected in a way that's  
36 collected with dealers or vessel monitoring systems and stuff  
37 like that up in the states and where you've got a very different  
38 system down here and what needs to be done in order to collect  
39 this information successfully?

40  
41 There may be questions that can be answered using students that  
42 actually go out and do the TIP sampling or what have you and try  
43 to set up the program in a statistically-valid way and try to  
44 collect the data in statistically-valid way, working with the  
45 local governments and so on.

46  
47 I know in the Virgin Islands and I suspect you just don't have  
48 staff expertise and not enough staff and too many demands on

1 staff and so there are issues with respect to that and I don't  
2 know if that's going to improve over the next five years.

3  
4 That's something that maybe the Southeast Fisheries Science  
5 Center needs to deal with, but maybe we can make recommendations  
6 or come up with potential research projects with respect to this  
7 that would help the local agencies gather the data the way it is  
8 supposed to be or should be gathered.

9  
10 **MIGUEL DEL POZO:** I think an important aspect, critical aspect,  
11 in improving the data collection is to somehow improve or build  
12 up the trust between the parties involved. What you get from  
13 the feel, when you are dealing with commercial fishermen, is  
14 that basically they don't have any trust in the management  
15 apparatus, in the local institutions.

16  
17 We need to understand that most of the data collected for  
18 management is stakeholder-based and if the primary stakeholders  
19 are not in a position where they want to share their data, then  
20 we're going to keep having these problems.

21  
22 On top of that, we have what Reni was saying, that we are seeing  
23 some shifts in the local communities. Some of them are just not  
24 really operating and some other ones are seeing more  
25 participation.

26  
27 We are seeing shifts as well in the gear, in the strategies.  
28 Places that traditionally use fish traps may have now divers and  
29 so it's a shift in the industry. It's a very resilient industry  
30 that it's difficult to address some times and I don't know, but  
31 somehow we need to move with them to be able to collect the  
32 data.

33  
34 A very important aspect to probably build up that trust is I'm  
35 guessing through a real participation process. That's a major  
36 concern you hear from primary stakeholders, that they are not  
37 happy with the consultation process. They feel that it's a top-  
38 down process.

39  
40 **BARBARA KOJIS:** Thank you very much, Miguel.

41  
42 **MIGUEL ROLON:** On this issue of the -- If you address this one  
43 first, validation of the landings, what we need is how we do  
44 that, in terms of the broad scope of things that Todd was  
45 mentioning.

46  
47 Some years ago, Richard Appeldoorn did a comparison of the data  
48 landings that we have and I remember your work was that they

1 were not good for determining where we are at that time, where  
2 we were in regards to the MSY.

3  
4 He said that at least we can get the trends and we're still in  
5 the same spot and that was about fifteen years ago or probably  
6 more. That's what we need to hear from you. Does the data that  
7 we have now allow us to know where we are in terms of the ACLs  
8 or just give us the trends and then if we need to improve the  
9 data, will that be a research priority and then what do we need  
10 to do to improve the data?

11  
12 That's the kind of thing that we need to give to the council on  
13 Tuesday, so when we go and discuss the research plan, the active  
14 research plan, we sit down with the people that collect the data  
15 and the scientists that can tell us how to collect the data, how  
16 to use it, or how to collect the data for a better use. That  
17 will be the actual nitty-gritty of the research plan.

18  
19 **BARBARA KOJIS:** To a certain extent though, Bob Trumble spent a  
20 lot of time and money putting together what needed to be done  
21 and it included validation and there was a very extensive --  
22 Now, obviously the funding for that is not available and it  
23 sounds like Nancie Cummings is coming up with a mechanism for  
24 doing presumably the TIP and the validation.

25  
26 Not seeing what her plan was and given the limited funding, she  
27 has pared it down and they're looking for funds to do this. I  
28 guess Todd needs to be here to kind of give us more information  
29 on that, but that may be something that the Southeast Fisheries  
30 Science Center is already doing and has that information. Now,  
31 research needs to supplement that, that's another question, I  
32 think.

33  
34 **MIGUEL ROLON:** The issue of developing some indexes for  
35 validation of -- Not validation, but comparison of the landings  
36 has been discussed between Bill and a couple of other people and  
37 actually, it's a project now with a group of NGOs or an NGO  
38 group that is trying to do electronic logging, electronic logs,  
39 for this area.

40  
41 We could pair that with the idea of having some indexes, where  
42 we get a group of fishermen who trust the government, addressing  
43 what Miguel del Pozo was saying, and then see if we can put  
44 together a form that they can use so it will give us some better  
45 indication of where we are regarding the ACLs. That's something  
46 that we need to hear from you also.

47  
48 Mike Sissenwine addressed this a little bit some time ago, a

1 couple of meetings back, and he was saying something better than  
2 I'm saying it now, but he was addressing the same issue, that we  
3 needed to have some kind of index, something that we can use as  
4 a thermometer of where we're going and where we are with the  
5 ACLs.

6  
7 This is my worry and I believe that at the end of 2013 that we  
8 will not know where we are and by then, people will be kicking  
9 in AMs, accountability measures, on the best available  
10 information that we have, which probably will be the poorest  
11 information in the trend, and then we'll be forced to close  
12 areas or stir the pot the wrong way and this is a concern that  
13 Roy has, because people tend to withhold data from us whenever  
14 something ominous comes from us because of the data and it's the  
15 other way around.

16  
17 Right now, this political decision of allowing the fishermen to  
18 submit all the data back from 2008 or whatever may trigger the  
19 accountability measures, because the system cannot be stopped by  
20 that.

21  
22 That's why all these questions have to be discussed by the  
23 council in some other forum, but here, what we need to know is  
24 do we have a problem with the data collection and how can we fix  
25 it and how can we relay that into a research priority?

26  
27 **BARBARA KOJIS:** Certainly if they go back to 2008 and that was  
28 part of the ACLs, then that ACL would have to be recalculated as  
29 well, but the other aspect of it is can you, given all of this  
30 stuff, can you figure out whether what's happening now with the  
31 exceedance of the ACLs -- Whether they're actually being  
32 exceeded and I guess that's something that -- If people are  
33 turning in extra data that they hadn't turned in previously and  
34 so presumably that's going to cause all sorts of problems and  
35 really you should be looking and comparing data as has been  
36 collected for the last thirty years.

37  
38 **JORGE GARCIA-SAIS:** I would like to know what's the magnitude of  
39 these new data entries. Is it just a few fishermen not entering  
40 their data or how big is it?

41  
42 **GRACIELA GARCIA-MOLINER:** I talked to Daniel because for the  
43 next SSC meeting, we were going to discuss the ACLs and what  
44 caused the increase that we have seen so far.

45  
46 Among the questions that I asked him was when was the new form  
47 implemented and when was the last time that he accepted the old  
48 forms and the reason for that question is that you have more

1 species identified to species in the new forms than you did  
2 before and so that's one issue.  
3  
4 Number two is the number of people who are actually submitting  
5 landings data from the time that we've been considering for the  
6 ACLs to now. I asked him what would be the effect of the new  
7 data coming in and he's not considering 2008 and 2009 and he had  
8 already entered some of the 2010, but he might not consider  
9 those either, but he will include all of the 2011 that has come  
10 in.  
11  
12 I asked him all these questions so that he will be prepared for  
13 the next SSC meeting to give you specific answers and so if you  
14 do have any specific questions that you want to ask of Daniel --  
15 I asked him about the licensing of the fishermen in Puerto Rico.  
16 That had changed and what was the reason for having all the old  
17 data being included.  
18  
19 There are another set of issues that have to do with all the  
20 surveys and research that has been conducted over the past three  
21 or four years, including a commercial fishing census and the  
22 catch shares group that was formed for the deepwater snapper  
23 fishery off the west coast.  
24  
25 They were collecting specific data for that. I don't know if  
26 that specific data that was collected, the way it was collected,  
27 was entered as part of the dataset. I don't know and so that  
28 was another question that I asked him.  
29  
30 We talked also about the three-month seasonal closures that you  
31 have in place and we were concentrating on the deepwater  
32 snappers, because that's mostly in the EEZ, if not all of it,  
33 and because most of the work that had been done in Puerto Rico  
34 had to do with the deepwater snappers.  
35  
36 He was also concerned about the three-month seasonal closure and  
37 if the increase in the landings could be due to the rapid effect  
38 of the seasonal closures, so that there would be more fish  
39 available after the seasonal closure, after a couple of years,  
40 three years or four years.  
41  
42 You need to know how fast the deepwater snappers grow in order  
43 to figure out if they've grown to a size that is catchable in  
44 three or four years. That's his way of looking at things.  
45  
46 We talked also about the reported landings that go to the  
47 Southeast Fisheries Science Center without any correction  
48 factors and then they are adjusted at the Southeast Fisheries

1 Science Center, but he is working on the specific correction  
2 factors for 2010, 2011, and 2012.

3  
4 Because in some of the SEDARs it had been called to his  
5 attention that there might be differences in the correction  
6 factors by coast and so you would have, for queen conch, for  
7 example, west, south, and east, but your northern coast would  
8 have very little conch landings. He was developing coastal  
9 correction factors.

10  
11 If you can think of any other questions to ask him, that was my  
12 list of questions for him so that he would be prepared. He also  
13 mentioned that yes, there is an impact of policy on the landings  
14 that are reported to the fisheries lab. When you look at the  
15 2010 and 2011 data, it's already, in the deepwater snappers,  
16 gone way over the ACL.

17  
18 **MIGUEL ROLON:** I don't know whether you were finishing very soon  
19 or not, but regarding the landings data, for the priorities,  
20 what you need to do is to copy what you did in March of 2012,  
21 where the SSC recommended everything that is needed to be  
22 recommended here and that includes the five-year research plan.  
23 That's why we kicked it back to you again and there, you  
24 submitted that Reni and Dr. Richard Appeldoorn should be part of  
25 that group that would be discussing the five-year research plan.

26  
27 If you copy what you have in 2012, almost everything that we  
28 have discussed now you have already discussed it, including the  
29 Bob Trumble MRAG report, and it will be a matter of just to copy  
30 and paste that into the priorities that you have here, because  
31 you discussed this at length.

32  
33 The thing is that when we were discussing this five-year  
34 research plan, they kicked it back to the SSC, because that's  
35 what the other guys are doing and also because I was told that  
36 the SSC role now is more important than it was before and so the  
37 happy medium was that, and that's what I discussed with Barbara,  
38 was that we meet today and we have the priority and then we will  
39 assemble this five-year research team, with Richard and Reni  
40 representing it, but I need somebody from the Virgin Islands,  
41 because we keep forgetting the Virgin Islands and so somebody  
42 from the Virgin Islands.

43  
44 Then we will report in November to you of what the research team  
45 came up with. At least with this part of landings, it is  
46 straightforward. The problem for the council then is how we can  
47 implement that, because as I said, I tried with everybody and  
48 the only thing I got was the Secretary asking the fishermen to

1 bring all the information and it goes nowhere into the  
2 laboratory.

3

4 **BARBARA KOJIS:** That's what Graciela has up there.

5

6 **JORGE GARCIA-SAIS:** Barbara, my concern is that aside from the  
7 increased effort in obtaining TIP data, I don't see how the  
8 council can actually improve very much the acquisition of the  
9 landings data, because that's something that DNER has been  
10 traditionally in charge of and as far as I know, Daniel Matos  
11 has a run on that.

12

13 In my opinion, the problem with the landings is what I expressed  
14 before. It's that historically there has been no good intent of  
15 obtaining effort data along with the landings data and the  
16 variability in trends of the fisheries can disrupt the  
17 interpretation of landings data as an indication of the status  
18 of the fisheries.

19

20 From that point of view, I just want to express my concern and  
21 also would like to ask what is actually meant by validation of  
22 the landings data, because I don't have that concept very  
23 clearly.

24

25 **BARBARA KOJIS:** Bob Trumble, one of his recommendations with  
26 respect to validation of the landings, was counting the number  
27 of boats that were out and he had over aerial flights as one  
28 option or just going down to the ports and seeing how many boats  
29 were out, fishing boats were out, and whether they reported on  
30 each date and whether they reported on that day and using that  
31 as information.

32

33 Then, of course, validation has occurred in the past comparing  
34 the TIP samples with what the fishermen were reporting as well  
35 and so it was a combination of trying to get information about  
36 just were fishermen reporting when they went out, reporting on  
37 the days that they went out, and then when they reported, were  
38 they reporting the same amount as they got from the TIP samples.

39

40 I believe both in the Virgin Islands and in Puerto Rico there's  
41 been big questions in comparing the data from the fishermen and  
42 the TIP samples. There's been quite a bit of difference in the  
43 data in many cases.

44

45 **MIGUEL ROLON:** The University of Miami, which was the one who  
46 started the data collection in Puerto Rico in the 1970s or  
47 1960s, they had a way, a kind of rough way, of validating the  
48 efficiency of the port agents. By the way, one of the problems



1 that Puerto Rico has is they eliminated the port agents. Once  
2 you eliminate that, then you don't have a grasp of what's going  
3 on.

4  
5 When we have the port agents, we also send, for fifteen or  
6 twenty days, a poor soul that will be sitting at the dock all  
7 the time collecting all the information that came through that  
8 dock and interviewing the fishermen right there and trying to  
9 make an assessment of the bulk of the fishery and all that, the  
10 landings.

11  
12 Then we compare that and we find that the escape, meaning what  
13 we didn't get because of the reports from the fishermen, was  
14 about anywhere from 15 to 20 percent. Then we use that to,  
15 quote, unquote, adjust the data, the landings data.

16  
17 The Center did not accept that and so we sent the information,  
18 the raw data, to the Center, the data as is, the data as was  
19 presented by the fishermen, but the report from the Puerto Rico  
20 government included the 20 percent.

21  
22 The other issue we have with the data is the politicians are  
23 trying to influence the data. When I was there, whenever the  
24 Secretary informed the senators that the landings off Puerto  
25 Rico were up by 3 percent this quarter, they talked to me and  
26 they asked me to get more information, because my report was  
27 either flat or negative.

28  
29 I told them I didn't want to beat the bushes to get the  
30 information for you and every time they did that, they  
31 threatened to fire me. Luckily, I was able to quit before they  
32 did it and so going back to the validation, I believe that if  
33 you go to what you have here, what you probably should do is to  
34 add or delete what we have here and then you get up the landings  
35 and go to something else.

36  
37 **BARBARA KOJIS:** I agree, because to a certain extent, we have  
38 gone through this a number of times with the ACLs and what needs  
39 to be done. There's been research that has been done and I  
40 think only in terms of how outside researchers, in essence,  
41 outside of DNER and so on, might be able to help the situation  
42 might be discussed in this meeting.

43  
44 How can somebody from outside, with respect to outreach and  
45 education, with respect to data collection, or what have you and  
46 then looking for outside funds with respect to that, but that  
47 would have to also be done with the agreement of DNER or DPNR  
48 with the Puerto Rico government and the Virgin Islands

1 government.

2  
3 **BILL ARNOLD:** Just a couple of facts and then I wanted to make  
4 one comment. This might influence your choice of research  
5 priorities, but for those of you that don't know, next month we  
6 will be convening a group to improve recreational reporting in  
7 Puerto Rico and to develop a recreational reporting program in  
8 the USVI.

9  
10 This is going to be a three-step process. This first step is  
11 just designing a program and hopefully that design will be done  
12 by January and then a proposal would be submitted for a pilot  
13 project that would probably last one year.

14  
15 Depending upon the outcome of that pilot project, and hopefully  
16 it's successful, we would then seek funds to implement a  
17 continuing recreational monitoring program in the USVI and, of  
18 course, that will require cooperation from the local  
19 governments, because the DPNR over there is going to have to be  
20 involved in doing that on the ground.

21  
22 The second thing is, in a separate topic, you talk about these  
23 landings data and not getting 2008 and 2009 and maybe getting  
24 2010, but keep in mind that for the species that were designated  
25 as undergoing overfishing, snapper grouper, parrotfish, and  
26 conch, the data we use to set those ACLs ran from 1999 or 2000  
27 until 2005.

28  
29 It was the activity then that's really influencing how we  
30 determine whether the fishery is overharvesting or is operating  
31 within the constraints of those ACLs. Unless these guys were  
32 not turning landings in in 2005 that they're now turning in,  
33 that really should not influence this landings versus ACL  
34 relationship.

35  
36 Then the third thing is the comment and that really relates back  
37 to what Todd said, which I thought was really important, that  
38 you guys need to kind of figure out where you want to be in five  
39 years and build your research plan accordingly and I think to  
40 figure out where you want to be in five years, you need to have  
41 clearly established goals.

42  
43 That may seem trite on the surface, but I bet if you asked -- If  
44 you polled each individual member of the SSC, much less the  
45 council members, much less the fishermen, et cetera, you would  
46 find a whole list, a laundry list, of goals, all of which may  
47 not line up very well.

48

1 I think it's really important that the SSC have a clear idea of  
2 what their goals are, maybe long term, but certainly for the  
3 next five years, and then these research priorities should fit  
4 within those goals and you may have four or five different goals  
5 and you should be able to allocate the research priorities under  
6 those goals.

7  
8 Like I said, it may sound simple, but I bet if you start talking  
9 about it, you'll find that it really isn't. Just to throw out  
10 some examples, is the goal to achieve MSY, maximize economic  
11 outcomes, to maximize the health of the resource, et cetera, et  
12 cetera.

13  
14 You can go on and on and I think that making those critical  
15 decisions regarding goals will help to guide you in everything  
16 you're going to do in setting up a research program.

17  
18 **MIGUEL ROLON:** The goals are set by the law. The law says that  
19 the goals are not to go over the ACLs and not to have  
20 overfishing and those are your goals and then research  
21 priorities are to look at what we have, as you did in March, to  
22 achieve that, to determine where we are in relation to the ACLs.  
23 That's the number one goal that we have and it says it by law.

24  
25 The problem that we are having is that everybody has an idea of  
26 what needs to be done, but let's take an example of a little  
27 one. The SSC recommends that the CFMC provide outreach to  
28 fishermen on how timely reporting is used to manage the  
29 fisheries.

30  
31 I put \$20,000 into that and I met with Alicia Barnes and  
32 actually, Carlos was there. I was told not in this year,  
33 because this is an election year and the fishermen will be upset  
34 and that's the reality of life that doesn't have anything to do  
35 with research priorities or common sense, but yet, I was washed  
36 aside because of that.

37  
38 Again, here the goal is to determine in five years how can we  
39 assess the trends that will lead to over passing or not the ACLs  
40 and right now, what you just said is what I've been thinking all  
41 the time.

42  
43 When we put together the ACLs, we took data that didn't have  
44 anything to do with the years that people are talking about  
45 right now and so in essence, what you're going to do is once you  
46 finish assessing that data and evaluating that data, almost all  
47 the species that you have suffering overfishing and some of the  
48 ones who are not suffering overfishing will be over the ACL and

1 this is all for the EEZ and if it doesn't work in the EEZ then  
2 it's supposed to be the federal government going to the area of  
3 the shoreline.

4  
5 If you look at the queen conch right now as an example, in the  
6 case of the queen conch we closed the EEZ surrounding Puerto  
7 Rico and the Virgin Islands except for the east end of St. Croix  
8 and now we know that there's a problem with St. Croix and they  
9 are going over the 50,000 quota they have.

10  
11 Again, my suggestion is that we go with what you have here and  
12 that's, again, going with what Bill is saying. If we all accept  
13 that the goal is set by the law, at least in this case, to  
14 assess the ACLs and where we are and the trends and I go back to  
15 what Richard was saying of we will probably never be able to  
16 pinpoint exactly where we are, but we can show the trends.

17  
18 Here, you have all the recommendations to the council that you  
19 could think of as of March of this year and you have even  
20 specific questions and I believe that we need to revisit that  
21 and see if you can call that a priority.

22  
23 **BARBARA KOJIS:** One of the other things we could do too is we  
24 could say we've discussed these ACLs and we've discussed them in  
25 previous meetings and the responsibility, to a large extent, for  
26 these primarily is the Southeast Fisheries Science Center and  
27 the DNER and the DPNR and the Southeast Regional Office.

28  
29 We have made recommendations about what needs to be done and is  
30 there some parallel work that we need to do, assuming that,  
31 because we've been discussing these for years and we still  
32 aren't making a lot of progress on this, is there parallel  
33 research that needs to be done in order to answer some of these  
34 questions and not the ACL, but what the status of the fisheries  
35 are and what changes there are over time.

36  
37 There were a couple of presentations that were included in this  
38 about using marine reserves, but there are other mechanisms,  
39 possibly, for doing this as well and maybe we should discuss  
40 that, because it may another ten or fifteen years before we're  
41 successful in getting a real ACL program, monitoring program,  
42 using fishers, with fishers going, that gives us the data that  
43 we need for ACL management.

44  
45 In many of these overfished species that we were talking about  
46 as well, the overfishing was island-based rather than all the  
47 islands and so we need to know the status of these.

48

1 **BILL ARNOLD:** Obviously Miguel's overarching goal is the  
2 ultimate goal of all of this and it's really to end overfishing,  
3 NOAA's primary goal, and to achieve MSY, but goals within that,  
4 one would be how do we make ACLs adaptive?  
5

6 I think that's something that would be worth applying research  
7 effort to, because right now we've got these -- I've said this  
8 many times, but we've got these static ACLs and we can't leave  
9 them static. We cannot sit on 1999-to-2005-based ACLs. At  
10 least that would be my personal opinion on it and so that would  
11 be a sub-goal that we would need to look at.  
12

13 Another potential sub-goal, and I'm just throwing these out as  
14 examples, would be are there fishery-independent mechanisms that  
15 we could employ to validate or to augment or somehow strengthen  
16 our ACL approach?  
17

18 Just ideas like that are some of the -- I guess maybe they  
19 should be sub-goals and not goals, but these are the sorts of  
20 things that we might want to consider and, again, that would  
21 then structure what these research approaches should be and help  
22 to prioritize what those research approaches should be.  
23

24 **JORGE GARCIA-SAIS:** Again, I would like to -- We're talking  
25 about where would we like to be five years from now and I think  
26 that perhaps, along with the goals that have been mentioned, I  
27 think that we should have at least a baseline capture per unit  
28 effort, a species-specific capture per unit effort measurement,  
29 as a baseline for future assessments that could weight in  
30 variations in the fisheries trends that have to do with the  
31 effort by the fishermen, changes in fishing effort.  
32

33 That way, MSY would not depend to be a proxy of landings and all  
34 the variability that that carries on with it and I think that as  
35 a scientific council, we should actually try to improve the  
36 factors that affect the landings rather than try to get landings  
37 data no matter what.  
38

39 From that standpoint, I believe that weighting in the effort  
40 that has been incurred in the landings data that we have will  
41 much better give us a normalized way of looking at the trends of  
42 the fisheries instead of just looking at landings data.  
43

44 **BARBARA KOJIS:** I believe that the new forms that the fishermen  
45 are supposed to be filling out and TIP as well is supposed to  
46 get information on catch per unit effort and so, again, you're  
47 getting back to how well are the fishermen filling out the forms  
48 and how much cooperation are you getting from the fishers and

1 how valid are the TIP samples in terms of sampling strategy.  
2  
3 That, we're just going back in a circle with respect to that and  
4 I agree that catch per unit effort is important, but I think  
5 there are mechanisms being put in place for that.  
6  
7 **JORGE GARCIA-SAIS:** I know and I know that these forms pretty  
8 much include all this effort data, but what I am suggesting and  
9 bringing up is that we adopt that kind of language as part of  
10 what our goals are as a council.  
11  
12 **RICHARD APPELDOORN:** One of the problems I see, and perhaps  
13 we're stuck with it by law, but I have never liked the ACL  
14 process. I think it's putting emphasis on things that we don't  
15 really know about and perhaps are misleading.  
16  
17 Certainly the idea of having an MSY for each species or each  
18 group of species even is difficult to conceptualize, given the  
19 vast changes we've had in the whole species composition over the  
20 last fifty years.  
21  
22 What is an MSY for a prey species now certainly was not an MSY  
23 for what a prey species would have been back in the 1960s and  
24 1970s or even the 1980s. I don't think we have a really good  
25 grasp on the kinds of changes that have happened.  
26  
27 Certainly we can play this game with the fishery we have now and  
28 hopefully hold it there, but it's not going to get us back to  
29 probably where we all agree it ought to be and so we're missing  
30 that whole larger component of the ecosystem-based management  
31 component of what we would like to know and where we would like  
32 to be, or at least be heading, in the next five years.  
33  
34 If we just focus on the ACLs and assessment aspects, which I  
35 agree are widely needed, I think that's going to be very  
36 limiting.  
37  
38 Secondly, and I'll give an example, just because I know it well,  
39 but we submitted a proposal to the council to look at the Nassau  
40 grouper aggregation at Bajo de Sico. This wasn't a research  
41 issue last year, because we didn't know about it until last  
42 year.  
43  
44 Once you know about it, it's a species that's highly protected  
45 now and so finding out about what its status is and is it in  
46 fact improving becomes, to me, a high research issue and so this  
47 is another problem with having a five-year plan, is that we have  
48 to make sure it's flexible enough to deal with things that crop

1 up during those five years.

2  
3 Speaking of aggregations, one of the issues, and I had to answer  
4 this as part of the questions from the Southeast Center, was  
5 that one of the issues with species that are primarily fished  
6 with aggregations is that what you're really looking at is it's  
7 as if the -- I'm not saying it is this way, but it's as if the  
8 population was actually a bunch of small populations all based  
9 around aggregations.

10  
11 Now, there is gene flow between them and so it's not a true  
12 population closure like that, but you can fish out an  
13 aggregation completely and as long as the catch is coming from  
14 the other aggregations, it's just not going to show up as your  
15 data and you can thoroughly fish out aggregations that way and  
16 never know you have a problem, until you realize that hey, we  
17 just lost nine of our aggregation sites.

18  
19 Having an understanding of the biology of these species and how  
20 this interacts with the data that you're getting I think are  
21 important research issues that are not necessarily built into  
22 the kind of straight assessment process and therefore, I think  
23 there's research issues related to those that we would like to  
24 have information on and so it's not the straight landings-type  
25 of information that we need.

26  
27 I think we need to think about the larger pictures of the  
28 ecosystem that we're dealing with as well as the narrow focus of  
29 what's happening with each population.

30  
31 **MIGUEL ROLON:** Actually, all you said is exactly one of the  
32 priorities that should be in the listing of priorities. You  
33 addressed the issue of landings and all that and we have other  
34 priorities, such as that one, that we need to really address.

35  
36 **BARBARA KOJIS:** Why don't we just take a break for about ten  
37 minutes right now and come back at eleven o'clock.

38  
39 (Whereupon, a brief recess was taken.)

40  
41 **BARBARA KOJIS:** Let's go back to our work. I think we've  
42 discussed enough about the ACLs and so on, with respect to the  
43 responsibilities of DNER, the Southeast Fisheries Science  
44 Center, et cetera.

45  
46 We probably should move on to looking at some of the other  
47 questions that we have or ways of gathering data. Richard  
48 mentioned the spawning aggregation information and, Graciela,

1 did you put that up there as a research point? Richard, how  
2 would you like to word that, the information you were talking  
3 about as being one of the focuses for research, a priority for  
4 research?

5  
6 **TODD GEDAMKE:** Let me just start by saying that the work on the  
7 spawning aggregation, Richard's work, I think is valuable,  
8 important work. I think one of the points brought up at the  
9 last SSC meeting -- I believe Mike Sissenwine made a clear  
10 statement just about the potential conflict of interest of  
11 individuals on the SSC putting forward specific research  
12 projects that they themselves have an interest in.

13  
14 Just to avoid any potential perception of that going on, if we  
15 could phrase these in more general terms, that would be cleaner,  
16 in my mind.

17  
18 I think what Richard is really highlighting is the fact that  
19 there is a need for basic biological information on certain  
20 species and when I was thinking about this coming up, this was  
21 maybe a protected species category, basic biology information  
22 category, or maybe spawning aggregation-type category, as  
23 opposed to specifically Nassau grouper-type aggregations.

24  
25 I think it would just be cleaner if we made sure that the  
26 recommendations that we put together were phrased in more  
27 general terms.

28  
29 **BARBARA KOJIS:** One of the other things I just want to mention,  
30 looking up at what Graciela has put up here, is that maybe we  
31 should title something like fishery-independent research or --  
32 Then put any research on spawning aggregations -- I would  
33 imagine most of that would be fisheries-independent. It depends  
34 upon what you're doing, but certainly I know the work that  
35 Richard has done and Rick Nemeth and so on have been fisheries-  
36 independent.

37  
38 **RICHARD APPELDOORN:** I certainly did not mean to suggest  
39 individual projects and so Todd got it exactly right. I was  
40 just using an example of stuff that I was doing as the type of  
41 things, but more broadly, I would say I think we need to have  
42 more research that is looking at things from the ecosystem  
43 approach rather than just a species-specific approach as the  
44 most general category or description of that.

45  
46 Another large area of I think research priority would be to  
47 assess the success or not of existing management strategies. An  
48 example here, and I'm not saying this is the specific one, but



1 an example of this certainly has been, for example, the work  
2 that Rick Nemeth and before him, Beets et al., who were looking  
3 at the red hind closure south of St. Thomas.

4  
5 I recently had a student look at the closures on the west coast  
6 of Puerto Rico and had another student looking at how the closed  
7 area at Mona was responding and so various measures have been in  
8 place, but if we're not looking at whether they're working or  
9 not, it may not be helping. I think research that's looking at  
10 the effectiveness of the management measures is another area,  
11 broad area, that we need to look at.

12  
13 **TODD GEDAMKE:** I think the other thing that I believe Richard is  
14 exploring is in the ability to take a look at the spawning  
15 aggregations, there are some new techniques and methodologies  
16 which are being explored for looking at those and so maybe  
17 tangential to this can be exploring advanced sampling  
18 technologies or alternative technologies. I believe you're  
19 looking at some acoustic information and I don't think that's  
20 been directly utilized throughout the Caribbean.

21  
22 Development of methodologies, this type of thing, in the  
23 specifics of the species or the specifics of the aggregation,  
24 there are also methodologies and techniques which may have  
25 applications for other areas of research, which I think if we  
26 could put some note in there for exploring advanced sampling  
27 technologies or alternative sampling technologies, that would be  
28 good.

29  
30 **JORGE GARCIA-SAIS:** I think that also within the fisheries-  
31 independent component of research, I believe that because we  
32 have already some quantitative baselines, recently established  
33 within the aphotic and mesophotic zones, of closed fishing areas  
34 that perhaps we could introduce the concept of monitoring in  
35 these areas at some timeframes that we could probably discuss  
36 later. Those quantitative baselines now allow us to establish  
37 monitoring programs based on fishery-independent techniques.

38  
39 **BARBARA KOJIS:** You're talking about monitoring programs of  
40 spawning aggregations or --

41  
42 **JORGE GARCIA-SAIS:** Not necessarily spawning aggregations.  
43 Spawning aggregations may be part of that, but just the natural  
44 habitats. Different type of benthic habitats and the species  
45 that are residents of those areas.

46  
47 Not necessarily, because when you have the aggregations, you can  
48 actually can measure -- You have a good measurement of density

1 or otherwise the density at the aggregation. What I am talking  
2 about is natural densities in the residential areas, the fish  
3 residential areas.

4  
5 **BARBARA KOJIS:** Do we want to discuss a little bit more the  
6 management measures that are in place and using fisheries-  
7 independent methods to determine the status or trends associated  
8 with the stocks being managed associated with those rules?

9  
10 As mentioned is the spawning aggregations and we have a closure  
11 for Nassau grouper and the status of Nassau grouper can be --  
12 It's difficult to determine now, because of the fact that  
13 fishermen are no longer keeping those fish and so they're not  
14 part of the landings data. They may be part of the bycatch  
15 data, but I don't think there's species-specific information  
16 being asked regarding bycatch.

17  
18 People have an option to write down or so on what their bycatch  
19 is, but the Nassau grouper in bycatch, would that, Graciela, be  
20 covered?

21  
22 **GRACIELA GARCIA-MOLINER:** The forms that they have now include  
23 one space for discards and so it says just alive, dead, other.  
24 Actually, it asks for the size of the fish that is being  
25 discarded, but it only has one space and there is only one study  
26 of discards in the Virgin Islands that looked at traps and  
27 included Nassau grouper and that's it. There's just anecdotal  
28 information on people landing Nassau and sending them back to  
29 the sea.

30  
31 **BARBARA KOJIS:** Then possibly if you're looking at specific  
32 species during the closures, are we interested in making any  
33 recommendations regarding including in the discard column of the  
34 catch reports that they report discarding certain species,  
35 especially like Nassau grouper, but there is also seasonal  
36 closures, in the Virgin Islands anyway, for a number of other  
37 species and during that period of time, people might be  
38 discarding those and that could be added.

39  
40 I don't want these forms to become too complicated, because it's  
41 asking the fishermen to be scientists and they've got another  
42 business, but Nassau grouper, having one other item on there  
43 that is really important that we've closed all the way to  
44 shoreline, may be something that we might want to recommend.  
45 Are there comments on that?

46  
47 **JORGE GARCIA-SAIS:** I have a comment related to Nassau grouper.  
48 After we have finished our fishery-independent surveys of

1 commercially-important fish in mesophotic reefs, we have noted  
2 that there is a sharp distribution pattern for Nassau grouper,  
3 which actually are pretty much associated with coral reef  
4 benthic habitat types and are pretty much restricted to depths  
5 between -- Or at least not too much deeper than a hundred feet.

6  
7 We've noted a pretty sharp distribution pattern where Nassau  
8 grouper were limited to about 100, 110, 115 feet and then other  
9 groupers would take off from there and so my comment is that we  
10 should consider, for any kind of fishery-independent assessment  
11 of Nassau grouper fisheries, that effort be concentrated away  
12 from the mesophotic areas and more into the depth ranges perhaps  
13 shallower than a hundred feet.

14  
15 Just make that note, because we have noted that pretty sharp  
16 contrast in the distribution of groupers, of large groupers, and  
17 particularly in the case of where Nassau grouper is pretty much  
18 associated with the coral reef environment and not into the rock  
19 or other types of pavement habitats that prevail within the  
20 slope, insular slope, and other type of habitats, such as  
21 regolith beds and those type of mesophotic habitats that we are  
22 used to find in mesophotic regions. Pretty much Nassau grouper  
23 is not associated with those, but rather tries to -- It's more  
24 commonly found in coral reef areas.

25  
26 **BARBARA KOJIS:** I think in the Virgin Islands -- Because there's  
27 the start of a Nassau grouper aggregation anyway over in a  
28 mesophotic reef area that's deeper than that. I think because  
29 the shelf area near the shelf edge is about the -- The minimum  
30 depth is about 120 feet and it may go down to 150. You've been  
31 working on that with Rick Nemeth, haven't you? Do you know what  
32 depths?

33  
34 **RICHARD APPELDOORN:** I am not sure exactly, but you're about  
35 right. From what I know, the kind of staging areas is about  
36 120, but the actual spawning event itself is about at 150. They  
37 go down off the -- They go down the slope for the actual  
38 spawning event.

39  
40 **BARBARA KOJIS:** The reef habitat part of it I think is  
41 important, because this is reef area.

42  
43 **JORGE GARCIA-SAIS:** This may not be something related to depth  
44 properly, but rather the benthic habitat and maybe the coral  
45 reef in that region extends deeper, but in the areas that we've  
46 seen in Puerto Rico, actually the coral reef -- The coral reef  
47 itself as a habitat tends to finish at about a hundred feet in  
48 most areas that we have seen, Bajo de Sico, Abril la Sierra and

1 those areas. You can find corals, but not a coral reef system  
2 below a hundred feet, usually.

3  
4 **GRACIELA GARCIA-MOLINER:** One of the issues that the council  
5 will be discussing during this meeting and actually took to  
6 scoping meetings is alternatives on the preparation of fishery  
7 management plans by island, island-specific rather than species-  
8 specific, the way they are set up now, because there are  
9 differences in the species distribution and the species  
10 preferences that are harvested culturally and ecologically.  
11 Keep in mind that research needs to be done for areas  
12 specifically and so not one size will fit all.

13  
14 **BARBARA KOJIS:** Management measures probably also differ.  
15 Puerto Rico has different management measures than the U.S.  
16 Virgin Islands and they may differ between even St. Croix and  
17 St. Thomas/St. John. Those are important aspects when you're  
18 talking about looking at the effect of regulations.

19  
20 **JORGE GARCIA-SAIS:** I would also like to comment -- Miguel had a  
21 comment about our experience at El Seco in Vieques. We saw an  
22 aggregation of the tiger grouper aggregating in an area which  
23 was not its natural habitat.

24  
25 Tiger grouper lives in one place and aggregates to spawn in  
26 another place. For example, the natural residential area for  
27 tiger grouper was the coral reef bank, whereas they actually  
28 aggregate to spawn in a sandy, patchy reef benthic habitat and  
29 so actually they -- Sometimes these fish are not really  
30 aggregating to spawn near -- Near their residential areas, but  
31 not particularly within their typical benthic habitat and so  
32 that may explain somehow the thing about the Nassau groupers  
33 there. They may be residential in the coral reef and may  
34 aggregate somewhere else to spawn.

35  
36 **BARBARA KOJIS:** These areas, I think you have probably found  
37 then in Vieques too, off of Vieques when you did your mesophotic  
38 work over there too. These are very deepwater coral reef  
39 systems and so if it's habitat-related and not so much depth-  
40 related, they may be deeper in these areas, but you're right  
41 that the spawning may be associated with a spawning aggregation  
42 as far as going outside their normal habitat. We have kind of  
43 explored a whole bunch of areas and is there anything else?

44  
45 **TODD GEDAMKE:** Could you just scroll up? I just see the heading  
46 "Fishery Independent" and above that, you have fishery-  
47 independent mechanism to strengthen ACL and then fishery-  
48 independent that is -- When I see fishery-independent and I

1 think about the situation we're in with uncertain landings and  
2 some of the TIP information, fishery-independent survey indices  
3 are going to be the quickest, easiest way or expensive or  
4 complicated logistically, but they are going to be the most  
5 informative to the management process sooner rather than later.

6  
7 I just wanted to make sure that the word "fishery-independent" -  
8 - That we had at least a specific statement in there that would  
9 include additional work to develop stock-wide fishery-  
10 independent indices or fishery-independent information.

11  
12 **BARBARA KOJIS:** Can you just repeat that so we can get that up  
13 there?

14  
15 **TODD GEDAMKE:** Let's get Richard's comment on this before we do  
16 that.

17  
18 **RICHARD APPELDOORN:** I think "fishery-independent" is a term  
19 that should be fairly reserved for fishery-related data  
20 collection, which usually, as Todd is referring to, is looking  
21 at landing and species compositions and size compositions, those  
22 kinds of things that are done with a survey that's independent  
23 from the fishery.

24  
25 As he said, it is going to be the most efficient way of getting  
26 a lot of the information that we're looking at and so the SEAMAP  
27 program as an example of that or the surveys that Todd has done  
28 in St. Croix with the trap thing.

29  
30 Those kinds of approaches are trying to get at the same things  
31 that our efforts at landings and the TIP information are trying  
32 to get and fill in holes or validate those kinds of landings and  
33 so the other research issues that we're looking at I really  
34 wouldn't call fisheries-independent research, although they are  
35 that, but usually when we're talking about fisheries-dependent  
36 data and fisheries-independent data, it's still looking at  
37 landings from population characteristics and so I would reserve  
38 the term for that.

39  
40 **TODD GEDAMKE:** Well said.

41  
42 **BARBARA KOJIS:** Let's clarify, because I don't think we want to  
43 get off at all the research that might be done that's fishery --  
44 You had fisheries research up there and we really want to have  
45 this focused on the questions that we want answered.

46  
47 Even like the spawning aggregations and so on and so forth are  
48 still focused and so we want fisheries research focused on or

1 something like that. Something that clarifies where we're  
2 going, I think. I don't think we just want fisheries research  
3 out here.

4  
5 **VANCE VINCENTE:** I am just going to throw out a suggestion on  
6 the floor regarding as to where is this research going to be  
7 implemented. I think a good way starting point would be MPAs.  
8 There are twenty-nine designated marine protected areas in  
9 Puerto Rico and this is just Puerto Rico.

10  
11 Out of those, twenty-seven have been established by the  
12 government of Puerto Rico and one by the National Oceanic and  
13 Atmospheric Association and one by the U.S. EPA. Of course, as  
14 to where the research is going to be conducted is going to  
15 depend on what kind of biological activities happen and two is  
16 species of importance.

17  
18 If we can start using these as a template and then say we  
19 selected these areas because we excluded one, two, three, four,  
20 five, six or seven because there are no spawning aggregations  
21 known for this particular species, but it would show not only  
22 the objectivity in the analysis, but also it will say hey, there  
23 are twenty-nine areas where money is going for research and  
24 there's a lot of things happening in these marine protected  
25 areas to see. How much of that can we use for our purposes?  
26 It's just an idea.

27  
28 Also, in addition to -- Since we're emphasizing on fisheries-  
29 independent data, I thought there's two types and those are  
30 specifically managed and sponsored and NOAA, like for example by  
31 NMFS, such as SEAMAP studies and the like, but there's a lot of  
32 fisheries-independent information out there which we have never  
33 used.

34  
35 I am not trying to sell my product or Reni's product, but there  
36 is a lot of monitoring efforts going on out there year by year  
37 and in my case, for sixteen years. It's specific habitats that  
38 have been monitored and which populations of conchs have been  
39 assessed continuously and measured.

40  
41 Specifically, just to give an example, not only for Puerto Rico,  
42 but in St. Croix, for two or four years we monitored the conch  
43 populations off the northwest coast of St. Croix as part of a  
44 different project.

45  
46 All these are reproducible. The stations are there and there  
47 are permanent benchmarks, but there's distribution of conch and  
48 lobster and species of concern, species managed under the

1 different fisheries management plans, which we never used and  
2 that's fisheries-independent and it's scientific. It's done by  
3 people like him and myself, which have some credibility.

4  
5 Maybe some of the money can go into analyzing this existing  
6 information and putting it out in sort of like a template. We  
7 know these are the areas that have been monitored for one year  
8 or more for what specific parameters, like habitat  
9 characteristics or conch populations monitoring. Just put it  
10 all in a big template. It's useful information anyhow.

11  
12 **MIGUEL ROLON:** The reason I sent you the Western Pacific as an  
13 example is because they discussed all this and they organized it  
14 in a way that apparently makes sense to NMFS. Going to what  
15 Vance is saying, what they have done is they have stocks and the  
16 human communities and they have ecosystem as part of the way  
17 that they organize the tables.

18  
19 That way, you don't mix apples and oranges and relating to what  
20 Vance is saying, they have, for example, on the ecosystem, to  
21 develop a useful science-based indicator of management  
22 effectiveness. Such indications must be clearly articulated, et  
23 cetera, et cetera.

24  
25 Then they have one section that is status. For each one of  
26 them, they have the status and in the status, they cited -- For  
27 example, freelancers conducted several studies similar to what  
28 Vance is saying and so you have a list of studies that have been  
29 done so you don't reinvent the wheel, but you go to the  
30 literature and see what is needed to be done.

31  
32 In some cases, what you need to do is to hire somebody, like we  
33 did with Reni some time ago, to mine that information and then  
34 put it in a summary that will make sense to the managers and the  
35 scientists.

36  
37 Regarding conflict of interest, each one of you will be in the  
38 position of conflict of interest no matter what you do. That's  
39 the way the Magnuson Act is written and so in order to avoid  
40 that, what they have here, and it's like going back to what Todd  
41 was saying, is that they have these broad categories and then  
42 they go to each one of them and then they have the category, the  
43 rank, and they mention the status.

44  
45 Then that will leave it to the council to decide how they are  
46 going to then pursue this and that way, you eliminate that  
47 problem.

48

1 In Puerto Rico and the Virgin Islands, the situation is worse.  
2 Whenever I want to meet with a marine scientist, I have the same  
3 people around the table and a couple of more. When I want to  
4 meet with fisheries scientists, I have these people around the  
5 table and a couple of more and it's the same people.

6  
7 To me, the way that they have done this is going back to having  
8 your list here, but then have the categories. Human  
9 communities, we are not talking too much about it, because  
10 Miguel del Pozo is kind of quiet there, but I know that he has a  
11 bunch of ideas.

12  
13 Right now, St. Croix has been declared, and I guess St.  
14 Thomas/St. John too, a fishing community, whatever that means,  
15 but we need to address the socioeconomic component of the  
16 fishery and address it here.

17  
18 Social science is the last thing in the totem pole of priorities  
19 when you have a low budget and the money that we have. It's not  
20 even in the law. We're not forced to have a social -- In the  
21 past, it was so-what kind of question. I believe that once you  
22 have a listing of all the things that we could do, then we can  
23 have these broader categories.

24  
25 We discussed this at the Western Pacific Fishery Commission and  
26 we found, for example, in the case of the Nassau grouper, we  
27 went through the same discussion. We end up with a spawning  
28 aggregation project that includes anything that aggregates that  
29 we call it a fish.

30  
31 That way, you have that broad category, that we want to endorse  
32 spawning aggregation studies, and then underneath, you can  
33 prioritize the species that we have, but you haven't addressed  
34 the broad categories yet.

35  
36 I believe that Bill started by talking about the goals and  
37 objectives and all that and you have to agree on that one and  
38 then see if you can fit your discussions into something similar.  
39 It doesn't have to be identical, but the buzz words that we are  
40 hearing in Washington now are "ecosystem" and "human  
41 communities" and "stock assessment" and so we may copy the same  
42 categories they have.

43  
44 Then regarding the status, in some cases around the table you  
45 might be able to say something about the status, just as Vance  
46 did today, but in others, you need to wait until this other  
47 committee will meet so we go to the status.

48



1 **RICHARD APPELDOORN:** I am suggesting a new grouping of I guess  
2 four things that -- There may be more as we think about this,  
3 but the first one would be -- The big heading is "Landings" and  
4 it would include both the recreational issues, concerns with  
5 recreational, and commercial fisheries and it would include both  
6 fishery-dependent and independent types of research.

7  
8 The second would be "Assessment and Management Strategies" and  
9 it would include things like the assessment of the functioning  
10 of MPAs, success of management targeted to our spawning  
11 aggregations or closed seasons or whatever.

12  
13 A third one would be the development of new alternative sampling  
14 techniques and a fourth one would be research directed at the  
15 ecosystem-based management issues. There would be things like  
16 spawning aggregations and movement studies I think are  
17 important.

18  
19 We've had a lot of research lately on habitat issues, which I  
20 also think is important. I would certainly like to see,  
21 although I'm not the person to do it, perhaps studies on really  
22 what kind of community structure should we be having to maintain  
23 healthy reefs.

24  
25 Should one of our research questions be do we really need to get  
26 big parrotfish back, for example, which I think we do, but there  
27 isn't a whole lot of research out there showing that and if we  
28 do need to do that, how would we do it?

29  
30 Those kinds of ecosystem-based management questions I think are  
31 there and they're important and so those are kind of the four  
32 major groups that I have come up with and then we talk about a  
33 lot of things that could fit within those and I don't know if  
34 that makes things clearer or not, but that's how things were  
35 breaking down for me anyway in this discussion.

36  
37 **BARBARA KOJIS:** Could everybody take a look at that? I sent  
38 this to everybody and it's the Western Pacific Regional --

39  
40 **UNIDENTIFIED:** The original or the updated?

41  
42 **BARBARA KOJIS:** I don't think there's too much difference  
43 between the updated and the --

44  
45 **MIGUEL ROLON:** The original was 2008 and they updated it in 2011  
46 and so the document you have is both.

47  
48 **BARBARA KOJIS:** It's the updated. Look at the format that they

1 put that in and see if this would work for what we would like to  
2 do and using those headings that Richard just brought out,  
3 because they have Table 1, Research Needs, and then Stocks and  
4 then they have a whole group of research and then with rank.

5  
6 **MIGUEL ROLON:** They have four broad categories of Stocks, Human  
7 Communities, Ecosystems, and Protected Species. You may want to  
8 look at that and copy it necessarily, but --

9  
10 **TODD GEDAMKE:** While people are calling that up, Richard, thank  
11 you for bringing us back to four categories and Miguel, too. I  
12 think that's the way we need to go.

13  
14 Just from what I had jotted down was Stock Status, with fishery-  
15 dependent and fishery-independent, Ecosystem, Socioeconomics,  
16 and Protected Species. Those are sort of the categories I had  
17 thrown out in one way, but I think if we bring ourselves back to  
18 that, a lot of these other pieces we've been discussing we can  
19 fit into that structure.

20  
21 **BARBARA KOJIS:** I agree. Let's look at those broad categories  
22 and decide what those broad categories will be and then we can  
23 take those pieces and put them into those categories and I don't  
24 think we need to rank them to begin with. We can decide how the  
25 ranking goes a little bit later, I think, but we have -- Todd,  
26 yours were a little bit different and so you can see if you want  
27 to change some of these or add. You've got Landings and your  
28 suggestion was Stock Status or something like that.

29  
30 **TODD GEDAMKE:** I just had Stock Status in my head as to what  
31 landings fit under, what the TIP fits under, what fishery-  
32 independent survey type falls under, but in terms of broad  
33 categories, I think you're looking at fishery-dependent  
34 information, fishery-independent information, ecosystem, and  
35 then I had socioeconomics and protected species.

36  
37 Landings is probably just a missed word, but landings and then  
38 fishery-independent, those, by definition, don't belong in the  
39 same sentence. Landings are fishery-dependent information.  
40 That's going to be a separate type of category.

41  
42 The surveys being conducted to validate landings are going to be  
43 part of that fishery-dependent section, but I've got my list and  
44 I'll see if I can sketch this out a little cleaner.

45  
46 **BARBARA KOJIS:** Is it contingent on us moving forward? Should  
47 we take a break while you do that and then we go or do you --

1 **TODD GEDAMKE:** No, I wouldn't want my comments to step on --  
2 Richard had a very valid way of looking at things and so I think  
3 if others in the room have a way of putting this down, let's  
4 throw them all up there and look at them and see if we all come  
5 up with the same things.

6  
7 I am reviewing the Western Pacific right now and just seeing if  
8 there's any consistency, but with what Miguel said, I think if  
9 we combine kind of what Richard and I had mentioned in terms of  
10 categories into that structure, I think we're close at least  
11 with the broadest headings.

12  
13 **BARBARA KOJIS:** Okay, because I agree with you on stock status  
14 being an overall heading, because landings is a little bit more  
15 narrow, and then you could have fisheries-dependent and  
16 fisheries-independent under that as far as --

17  
18 **RICHARD APPELDOORN:** I am just looking at the Hawaiian group and  
19 the one thing that's different from the way that we have just  
20 been talking about it in our discussions here was they have  
21 broken down human communities as a separate category, broad  
22 category.

23  
24 I initially would have said a lot of the research would fall  
25 under particularly the landings issue. There's a lot of  
26 socioeconomic work that I think needs to be done, but then,  
27 thinking about this further, there's a lot of information that I  
28 think we need, given the mandate of the council, that doesn't  
29 fall into that.

30  
31 For example, broadly speaking, the mandates for the council are  
32 trying to do the most with the resources you have for  
33 socioeconomic benefits and if we're not really looking at  
34 socioeconomic benefits, we're not ever going to answer that  
35 question.

36  
37 While we're all worried about the status of the stocks just from  
38 a biological productivity point of view, what impact is all of  
39 this having on the communities, because that's supposedly who  
40 we're serving.

41  
42 I don't think those broad questions fall into any of the stuff  
43 we're talking about here, per se, and so I don't know whether  
44 those kinds of questions need to be broken out as a separate  
45 thing or somehow they would fall into -- Miguel, over to you, I  
46 guess.

47  
48 **MIGUEL DEL POZO:** Basically, I was looking at this before, of

1 this category of the human communities, and indeed we need to  
2 highlight the importance of this aspect, because, at the end of  
3 the day, when we are dealing about management, fisheries  
4 management, if we are trying to -- Our goal is to have a healthy  
5 and sustainable resource and we are basically talking about how  
6 a group, a population of humans, access a resource.

7  
8 That's the main thing here and if we don't understand the  
9 dynamics, the politics, of those social groups, we will never  
10 understand really how this management and all regulations we  
11 could create will land there or if it will work.

12  
13 At the moment, I am working with some communities in the south  
14 and I can tell now that they have no idea about ACLs. They have  
15 no idea that that has taken place and they know nothing about  
16 that.

17  
18 It goes with many other measurements and so basically I guess  
19 what I'm saying is that we can sit here and revolve around the  
20 stock data and the populations data, but if that bridge doesn't  
21 take place, if we don't understand that population, it won't  
22 really have any sort of impact in reality and we will be just  
23 dealing with the same problem over and over again and that also  
24 reflects to the data collection.

25  
26 It's another symptom for the same problem and so anyway, they  
27 are some of the proposed topics here or research subjects that I  
28 think are very pertinent and I don't know. We can go over that  
29 if you want now or --

30  
31 **MIGUEL ROLON:** Along the line of Dr. del Pozo, the reason I  
32 brought the Western Pacific is because they are closer to us  
33 than the continental U.S., island communities and all that. For  
34 example, in the human communities thing, they have patterns of  
35 resource utilization and dependence, including sources, uses and  
36 distribution of fish in fishing communities. There is analyzing  
37 this information, et cetera, et cetera, and it would also assist  
38 in the allocation of ACLs, should this become necessary or  
39 desirable.

40  
41 Then they have status and they have some groups that did some  
42 studies about this, so they can use it for allocation. We  
43 already decided, in the council discussions that we had before,  
44 that we are going to move to island-specific management plans  
45 and this goes perfectly into what we are trying to do here and  
46 it goes into the socioeconomics of the fishery.

47  
48 **JORGE GARCIA-SAIS:** Which point is that?

1  
2 **MIGUEL ROLON:** That's on page 5 of the Western Pacific. This is  
3 the kind of language that we need to put together and again, it  
4 doesn't mean that we need to copy everything that they say, but  
5 it's very close to what we are saying here and that's why when I  
6 was thinking about it, the challenge of putting together a five-  
7 year research plan that the SSC recommended, which, by the way,  
8 is a mandate under the Act, is greater than people think.

9  
10 That's why what you are saying, if this paragraph fits into what  
11 you are saying, we can copy that or adopt that and modify it  
12 somehow, because you are right that we are sometimes focused,  
13 because of the priorities or because of the budget or whatever,  
14 on the biological aspect of the fishery.

15  
16 Then the political and socioeconomic aspects of the fishery are  
17 left behind somehow and this is by design, when Congress  
18 discussed all this, and my suggestion is each one will go  
19 through this once and copy and paste whatever you think is  
20 appropriate here and modify it somehow.

21  
22 Before moving into that, we need to decide the four categories  
23 or five categories. Do you want to call it Human Communities or  
24 do you want to call it something else? Then under each one of  
25 them, you put the pieces together of which one fits better and  
26 we need to have something like this. This is something that we  
27 need to do and this is the status, to give you an indication of  
28 why and all that.

29  
30 The ranking can be done by the SSC when they meet in November or  
31 by the council and the SSC when they meet in December, the  
32 representative to the council. The ranking will have to do with  
33 the priorities of the National Marine Fisheries Service as a  
34 whole and the budget that we have.

35  
36 Just to give you an indication of the budget, I have monies now  
37 to complement the research that the Southeast Fisheries Center  
38 and the local governments will do, but it has to be a one-shot  
39 deal. I cannot put money into a five-year data collection  
40 program to enhance the way that Puerto Rico or the Virgin  
41 Islands collect the information, but if I have something in here  
42 that is concrete that I can translate into a particular project  
43 for the council, then the council can fund it.

44  
45 **BILL ARNOLD:** One suggestion I have for your ecosystem component  
46 is to maybe term that "Ecosystem Responses to Management", so  
47 that it's not such a broad category of whatever may be going on  
48 down there.

1  
2 Then you could sub-categorize that into responses of the  
3 biological community and responses of the human community and  
4 that would tend to capture the things you guys are trying to get  
5 down here.

6  
7 **BARBARA KOJIS:** Something like responses to management of the  
8 human communities.

9  
10 **BILL ARNOLD:** Your Item D would be Ecosystem Responses to  
11 Management, which is what we're really after. If we do  
12 something, what are the effects? Then under that, you could  
13 have the two sub-categories, like the biological community, like  
14 spawning aggregations, and to the human community, like the  
15 economics, et cetera.

16  
17 **TODD GEDAMKE:** I agree with Bill. In the short term, at least  
18 in the near future, that heading is very reasonable. I also  
19 think that the term "ecosystem-based research" or that phrase,  
20 has been thrown around to the point where we aren't really sure  
21 what it means anymore.

22  
23 However, if we are to reach a point sometime in the future where  
24 we are able to model or look at the ecosystems as a whole, there  
25 may be -- There may be a longer term research objective which  
26 just isn't on ecosystem responses to management and so ecosystem  
27 responses to management are in the short term, whereas the  
28 investment for longer term data collection, to be to actually  
29 model ecosystems as a whole, is a much broader category.

30  
31 It won't be in the -- I don't think a lot of money should be  
32 allocated or us prioritize it number one on our list now, but it  
33 would be a shame, I think, to forget the idea that if we really  
34 want to do this type of ecosystem approach that it's going to  
35 take a long investment of time and data collection and so if  
36 there's maybe a secondary category we can put in there just for  
37 the longer term, longer horizon, thing, that would be good.

38  
39 **BILL ARNOLD:** Could we make that a third category, Ecosystem  
40 Modeling?

41  
42 **TODD GEDAMKE:** Just to be clear, I see this as a placeholder, a  
43 thought placeholder, for us and not that we should spend a lot  
44 of time discussing this right now at all, but this really needs  
45 to be ecosystem modeling or the future of ecosystem modeling,  
46 something like that.

47  
48 **BARBARA KOJIS:** My suggestion is that -- Todd, do you have

1 another comment?

2

3 **TODD GEDAMKE:** Yes, I did. I think in taking my sweatshirt off  
4 from warming up a little, I got a little extra blood to my head  
5 and so I'll throw one more comment out. I hate doing it,  
6 because the importance of the socioeconomic research and my  
7 grounding is on the communities that are based in this stuff,  
8 but I think at a previous SSC meeting the point was raised that  
9 we're currently mandated, under MSA, to look at the overfishing  
10 designation as a top priority and that NS-1 and 2 trumps NS-8.

11

12 While putting this broader category out, I think we really need  
13 to make sure we focus on how that will tie into management,  
14 because we have an inability right now to really pinpoint stock  
15 status in terms of MSY, which is our number one legal  
16 responsibility.

17

18 Then beyond that, it is to consider the economic impacts of the  
19 communities that are surrounding it and so I think that just to  
20 make sure -- I, at times, feel they are all one big part of the  
21 mix, but I also feel like my hands are chained behind me with  
22 the legal structure that is coming from the people above. I  
23 don't know if that makes any sense, but --

24

25 **BARBARA KOJIS:** What I am suggesting is we break for lunch now  
26 and, Graciela, could you work with me on -- We'll fix this up a  
27 little bit more, so we've got something we can focus on, and  
28 let's come back from lunch at 1:30. That will give you an hour-  
29 and-a-half.

30

31 Graciela and I will try to get this into a little bit of  
32 formatting that this makes sense to and then we can put stuff in  
33 and then we can look at it a little bit when we get back and see  
34 how well we're doing. If you haven't had an opportunity to look  
35 at this Western Pacific Regional Management Priorities, why  
36 don't you take a look at this at lunchtime as well and see --  
37 Because that may give us a lot of ideas and suggestions for how  
38 we want our research priorities to work.

39

40 (Whereupon, the meeting recessed for lunch on August 27, 2012.)

41

42

- - -

43

44

August 27, 2012

45

46

MONDAY AFTERNOON SESSION

47

48

- - -

1  
2 The Scientific and Statistical Committee of the Caribbean  
3 Fishery Management Council reconvened at the El Conquistador  
4 Hotel, Fajardo, Puerto Rico, Monday afternoon, August 27, 2012,  
5 and was called to order at 1:30 o'clock p.m. by Chairman Barbara  
6 Kojis.

7  
8 **BARBARA KOJIS:** Graciela and I just put something together  
9 regarding trying to put in kind of a formatted form the things  
10 we discussed this morning. It's not everything, but most of it  
11 and we put it in a table similar to the table that the Western  
12 Pacific Council put together and we started off with major  
13 headings such as the Roman numeral I, Stock Status.

14  
15 The names after that, Todd and Richard, are suggestions, because  
16 -- I will explain that a bit later. The major headings were  
17 like Stock Status and then Assessment of Management Measures  
18 Regulations Currently in Place and these are based on our  
19 discussion of what we thought should be the major headings.

20  
21 Then if you go down to the other headings as well, we had  
22 Ecosystem as a major heading and we had Fishery-Associated Human  
23 Communities as a heading, trying to be a little bit more  
24 specific about some of them, and a new one of Alternative  
25 Sampling Techniques, which maybe needs a little bit more  
26 information about focus there, but those were the various  
27 headings that we put together based on the ones that we were  
28 discussing earlier.

29  
30 Then we broke it down and under those were Commercial Fisheries  
31 and Recreational Fisheries under the first one, the Stock  
32 Status, and then Fisheries-Dependent and Fisheries-Independent,  
33 meaning fisheries-dependent studies and fisheries-independent  
34 studies or topics, and we listed some of the topics there.

35  
36 We did the topics also and where the X's are on the side, it  
37 indicates those are topics that you would rank and so the X was  
38 -- Of course, we weren't ranking them, because we're not at that  
39 stage yet, but it was just giving it ranks and then this is all  
40 the different kind of topics that we put under each one of these  
41 after we pulled out from the discussion we had this morning.

42  
43 Now, the names are on there because I think once we've discussed  
44 the major topics and so on, the most effective way I think of  
45 doing this, if you all agree, is to break this meeting down into  
46 sub-groups and have the different sub-groups look at each of  
47 those topics and work on coming up with the breakdown or the  
48 other topics within each one of these and typing up the status



1 and information about status, if we have anything, there.

2  
3 These sub-topics and so on and all of these are flexible at this  
4 stage. It was just to kind of try to put what we had discussed  
5 into some sort of format.

6  
7 Just to explain, for those of you who haven't looked at that  
8 Western Fisheries thing very much, there's usually an  
9 explanation about -- For each of the topics, an explanation  
10 about what needs to be done and then what is the status, what  
11 has been done so far and where do we have information relating  
12 to each of these topics, and then there would be discussion, I  
13 assume discussion, of what further information needs to be  
14 collected.

15  
16 Anyway, maybe what we should start with is looking at the major  
17 topics and see if this encompasses what people feel is needed  
18 here for the major topics to cover. I could email each of you  
19 this so you could look at it as well, if you want. That might  
20 be the easiest thing, because it's hard when it's not upfront.  
21 Let me do that.

22  
23 **MIGUEL DEL POZO:** I have noticed that -- Well, we're going to  
24 work on that, but under the social aspects of the fisheries,  
25 most of the studies seem to focus on commercial fishing and  
26 there is very little information on recreational fishing and I'm  
27 just pointing that out, that it's something that maybe needs to  
28 be looked at.

29  
30 **BARBARA KOJIS:** We did break down the first one, without putting  
31 any topics under Recreational Fisheries, but each of those other  
32 topics might deserve that breakdown as well, so that we make  
33 sure we're focused on that, but you're right.

34  
35 **TODD GEDAMKE:** Just a question as to where we're going with this  
36 for tomorrow or for the council. Is the intent to present this  
37 template to the council or is the intent to present the broader  
38 categories and the pieces?

39  
40 I guess what I'm wondering is how much time I should look at now  
41 in terms of wordsmithing different pieces or is just a section  
42 of this going to be presented to the council at the meeting?

43  
44 **MIGUEL ROLON:** It would be up to you. You can go as much as you  
45 can and then Barbara is going to give a presentation, an update,  
46 of this is where we are and this is the process that we are  
47 going to follow and then we will mention the meetings in between  
48 and then the December 19 meeting.

1  
2 **TODD GEDAMKE:** I thought, when you sent the email out without  
3 the background information, I was very pleased to see that the  
4 intent of this was to be the first step in a development process  
5 that would be finalized during the next one and I would just  
6 like to make sure that that gets conveyed in the report to the  
7 council, that this is going to be an iterative process and we  
8 will take comments and people's feedback and we will revise.

9  
10 I also would like to stress that the interim work before we  
11 convene next will be really helpful and really determine how  
12 well put together this document is. If we show up at the next  
13 meeting having not looked at this in between, we're going to be  
14 back at the same discussion points.

15  
16 **MIGUEL ROLON:** Also, it will be nice if you put somewhere a  
17 paragraph that says this is what we need to happen between here  
18 and December 19, so you have 1, 2, 3, 4, so the staff can follow  
19 that. Then we will have a better indication to the council of  
20 this is where we're going and this is the recommendation of the  
21 group.

22  
23 **TODD GEDAMKE:** I will regret saying this, but I think it's  
24 important to pin us down with individual tasks on pieces here.  
25 I know you have our names up in front of Stock Status, but just  
26 assignments, so that next time we get back we all know who is  
27 responsible for which section, so we don't have holes and pieces  
28 that are missing.

29  
30 **BARBARA KOJIS:** We will have to decide how we want to do it. I  
31 certainly put names and responsibilities up here for this  
32 particular meeting, but then what do we need to do to get this  
33 moving forward even farther than this is already and send it  
34 around?

35  
36 It may be that we can just have subdivisions on this and get  
37 this moving forward even after this meeting if people are  
38 willing to work on it and then send it around to everybody and  
39 then have an ad hoc committee meet as well, but, Miguel Rolon,  
40 it looks like you would like to speak on this.

41  
42 **MIGUEL ROLON:** The suggestion is similar to what you were  
43 discussing. As I say, if you move as far as you can with this  
44 outline and then, for example, Stock Status, you can send that  
45 particular item and emphasize it to Jim Berkson and Mike  
46 Sissenwine and get their contribution and their feedback.

47  
48 When you put together the tasks of the things that you want us

1 to do, certainly the subgroup that is going to be working with  
2 the five-year management plan -- You addressed this before and  
3 you suggested Reni and Richard, but we can ask Miguel del Pozo  
4 also to participate and other people.

5  
6 Then that will run parallel to this exercise and at least if we  
7 have the broader scopes of what we have here, then the other  
8 subcommittee or team that is going to work with the actual  
9 management plan or five-year research plan will beef it up and  
10 maybe they also will have some questions for you between here  
11 and December.

12  
13 I envision that between here and December that you may end up  
14 with a draft that you will call a fishery research plan. Maybe  
15 we will have to polish it a little bit, but the idea is to put  
16 it in the agenda as a final adoption for the council and then we  
17 can have a document.

18  
19 It will be a live document. As Richard said, it has to be  
20 flexible. If between here and 2018 we find something that is --  
21 Remember, we have elections in November and usually after the  
22 elections we have new acronyms. Some history tells us that and  
23 so this fishery research plan will be adopted in December and it  
24 will be flexible and maybe we will knock on the door of the SSC  
25 in 2013 for some fine tuning or some specific questions.

26  
27 **CARLOS FARCHETTE:** I have got a quick question. On the  
28 Assessment of Management Measures, should you not also include  
29 the three parrotfish that have been prohibited now?

30  
31 **BARBARA KOJIS:** I sent the table to everybody and you might want  
32 to add that on there as well. That was the midnight, blue, and  
33 rainbow parrotfish.

34  
35 **TODD GEDAMKE:** I think this is a good example of kind of what I  
36 was touching on before, that we're looking at the outlined  
37 Assessment of Management Measures and this is Year-Round Harvest  
38 Prohibitions and we don't want to get too wordy with things, but  
39 this really -- The point of this subheading is to evaluate  
40 species which are fully prohibited.

41  
42 The space may be more beneficially used to describe what we  
43 would want to do with looking at those species rather than list  
44 all of the species that are prohibited, but either way. I don't  
45 feel as strongly about it.

46  
47 **BARBARA KOJIS:** Some of it is we put those in there to remind  
48 people, because not everybody is as familiar with things as you

1 are and then you're right. We need to make these statements,  
2 concrete statements, in each one and that's what I'm hoping, is  
3 that when we break into subgroups that each of the groups of two  
4 can fill this out and make the statements more complete or  
5 specific and then we can come back and either this afternoon  
6 before we go or tomorrow morning, revise this and comment on it.

7  
8 **VANCE VINCENTE:** Just a very quick comment is that's a very good  
9 point, because, for example, the Goliath grouper, the  
10 Epinephelus itajara, I believe it is, is no longer a species of  
11 concern by NMFS, right?

12  
13 **TODD GEDAMKE:** Vance, I don't wear my NOAA t-shirt when I go to  
14 the east coast, middle east coast, of Florida, because it is  
15 still a species of -- It's a fully prohibited species and I was  
16 actually going to follow up on the Goliath grouper as a perfect  
17 example of how we might want to phrase something.

18  
19 The Goliath grouper right now, anecdotally, and even me  
20 personally anecdotally, I have seen a recovery rebound in my  
21 dive sites, but as we all know, our own anecdotal reefs are not  
22 the story.

23  
24 When NMFS is looking at evaluating the Goliath grouper right  
25 now, we have no information, because they're prohibited to take.  
26 There's not even the ability to go collect 500 to get age and  
27 growth on them and so really, the challenge here with how do we  
28 evaluate management of prohibited species, the question there is  
29 how do we evaluate species for which no data exists?

30  
31 That's going to be the problem with any of these species. The  
32 large parrotfish, the fishermen know they're not supposed to  
33 take them and we're not going to see them in TIP samples and so  
34 this is going to require fishery-independent work, spawning  
35 aggregation work.

36  
37 This is going to require those types of studies to give us those  
38 insights into those species and so what do we want to do? I was  
39 thinking in my head of how do we get information on species for  
40 which fishery-dependent information will be unavailable?

41  
42 **GRACIELA GARCIA-MOLINER:** The earlier version of this table, you  
43 had something that was, and Miguel brought it up, of build trust  
44 from the fishermen. Correct me if I'm wrong, but it's either  
45 the black grouper or the Goliath grouper, the one that both  
46 recreational, charter, and commercial fishermen have shown  
47 videos of large numbers of these in some areas.

48

1 This would be a good time to involve the fishermen, because they  
2 use dive cameras and they know where -- If you're going to find  
3 the Goliath grouper, they know where to find them and so there  
4 are ways on getting back to the fishermen some of the  
5 information for these prohibited species, because that's  
6 something that always comes up, is you prohibit something in  
7 terms of management and that's the end of it. We never see it,  
8 even if it comes back.

9  
10 **BARBARA KOJIS:** Even asking the fishermen to collect the data  
11 and paying them to collect it, because they catch it as bycatch  
12 and that could certainly be a way of collecting the information  
13 and having that rapport with the fishers.

14  
15 Getting back to what we want to do with this, are the main topic  
16 areas sufficient to get us started? Is there anything that's  
17 missing from those Roman numeral topics and you should have  
18 received them by now and so pull it up.

19  
20 If somebody is working on one of these topics -- I didn't even  
21 put anyone on New and Alternative Sampling, but I think that's  
22 partly because we don't have enough people and maybe somebody  
23 can do two of them or one group can do two sections.

24  
25 You can even clarify the topic a little bit more, if need be,  
26 when you're working in your groups, if you find that the topic -  
27 - If you want to improve the wording on that or what have you,  
28 but, in essence, these topics cover the gist of what we want  
29 broadly covered. The big five right now, are these the basic  
30 topic areas that we want covered?

31  
32 **BILL ARNOLD:** Barbara, are you looking for volunteers for the  
33 Topic V or how are you going to handle that? I might have  
34 missed that.

35  
36 **BARBARA KOJIS:** I think the easiest way to do it is to have --  
37 It's got to be one group that does two topics, because I think I  
38 have put everybody in something. First of all, are you happy  
39 with the topic that you're covering? Look at that and see if  
40 you're happy with those topics.

41  
42 You may have a preference in something that you feel like this  
43 is the area that you've got the expertise in it. As long as  
44 you're happy with this -- For Stock Status, I had Todd and  
45 Richard Appeldoorn and then Bill Arnold, myself, and Graciela  
46 would do the Assessment of Management Measures and then  
47 Ecosystem would be Vance and Reni and then Fisheries-Associated  
48 Human Communities would be Miguel and Walter, if we can get him

1 on the phone, but I understand from Graciela that he might be  
2 picking up his mother-in-law, to get her out of harm's way. New  
3 and Alternative Sampling Techniques, Todd and Richard.

4  
5 **TODD GEDAMKE:** I am usually a big fan of assigning the brunt of  
6 the work to the people that don't show up at the meetings and I  
7 say that humorously, but we have Jim Berkson and Sissenwine  
8 that's part of this team and I think that in at least just  
9 penciling them in to assist with the Stock Status part would be  
10 appropriate.

11  
12 **BARBARA KOJIS:** Excellent. Carlos, would you like to help out  
13 on one of those?

14  
15 **CARLOS FARCHETTE:** Sure, I will help.

16  
17 **BARBARA KOJIS:** You can pick one or you can tell me later and  
18 we'll put it in. It would be excellent, because Miguel has  
19 really nobody to work with him, and why don't you go and work  
20 with Miguel on that.

21  
22 Any other comments? Any other questions about this then? It  
23 seems like we'll leave the topics as they are right now and you  
24 can fix them up if you want, as you're working on it, maybe if  
25 they need to be more specific or what have you.

26  
27 Just remember what I put down there was just ideas that we had  
28 from this morning, but you can add other topics and then flesh  
29 it all out with more information about the rationale for  
30 addressing each topic and then start filling out the status part  
31 of it from just the information that you have.

32  
33 **TODD GEDAMKE:** There's some pieces that I'm not comfortable with  
34 the wording, but it's not worth discussing right now and my  
35 thought was what we've done is looked at the West Pacific five-  
36 year research plan and gained a lot of ideas and insights from  
37 what they have as a template.

38  
39 Graciela or anyone else that may be privy, if there are other  
40 regions that have these sorts of plans already in place, I think  
41 it would be really good for us to see the logic that has gone  
42 behind other regions and how they've put it together.

43  
44 As we've already done this morning and into this afternoon,  
45 there are multiple ways of breaking up the largest categories  
46 and rather than reinvent the wheel, let's see if we can borrow  
47 thoughts and ideas for maybe some language from other regions  
48 too.

1  
2 **BARBARA KOJIS:** Very good. Any other comments? Why don't we  
3 break right now and do our subgroups and get to work and then  
4 come back together. Do you think four o'clock? That gives  
5 everybody two hours and you may have questions at that point or  
6 what have you and we can look and see what's been done.

7  
8 Maybe at four o'clock we can have everything ready and we can  
9 try to get it over to Graciela. Do your section and she can  
10 just put it altogether in a table, cut and paste, or we can do  
11 separate tables. It may be best to do separate tables. Very  
12 good.

13  
14 (Whereupon, the meeting broke into subcommittees.)

15  
16 **BARBARA KOJIS:** Thanks, everybody, for working on all of this  
17 table and we'll start with Todd Gedamke presenting the first  
18 topic, Stock Status, that he and Richard Appeldoorn worked on.

19  
20 **TODD GEDAMKE:** Richard and I spent a good bit of time getting  
21 into both the nitty-gritty and the philosophy behind what we're  
22 trying to do. What I'm going to present here is -- I think we  
23 were calling them placeholders that definitely need some  
24 fleshing out.

25  
26 We didn't do any rankings. We put a bunch of pieces, but the  
27 main thing that we did is we looked at Fishery-Dependent and  
28 Fishery-Independent as the categories being a little specific  
29 for the broad-based.

30  
31 The research questions will end up -- Let me just give the  
32 example. For age at maturity or length structure, those can be  
33 collected through either way. We need the information on length  
34 structure. If the commercial fishery-dependent data is the  
35 mechanism to do it, then that would be one way of accomplishing  
36 it. Another way might be through the fishery-independent and so  
37 we thought the broader categories were better. If you're  
38 looking at this for guidance, I am going to jump down to --

39  
40 **RICHARD APPELDOORN:** Are you going to go to our preface first?

41  
42 **TODD GEDAMKE:** Yes and once again, this is from the hip in the  
43 last two hours, but we were -- As Richard indicated in our  
44 discussion earlier, he was trying to make the distinction  
45 between research and data collection and so once we get a chance  
46 to wordsmith, we will go something along these lines, but that  
47 in no uncertain terms would be included recommendations that  
48 represent a need for improved basic data collection and that

1 these are really minimal requirements for any management.  
2  
3 In a classic sense, a research plan should really represent  
4 those studies or priorities which complement existing programs  
5 and fill gaps.  
6  
7 We think there's a really strong need for the SSC to highlight  
8 the fact that we don't have some of the minimal data that we  
9 need to do management, but we also wanted to make the  
10 distinction that, in a classic sense, research priorities are  
11 really for complementing what should be minimally collected.  
12  
13 With that being said, I'm also -- Richard, please interrupt me  
14 if I misrepresent or mischaracterize what we've been saying, but  
15 I wanted to jump down to this section right here. Barbara had  
16 written up, as a placeholder, assessment of appropriateness of  
17 using ACLs in the Caribbean and what needs to be done to collect  
18 the information successfully to be statistically valid.  
19  
20 One of the discussions that has come up since the acronym "ACL"  
21 has been discussed was are they appropriate for using in the  
22 Caribbean and I think the SSC has had a number of discussions  
23 regarding the fact that we have real uncertainty about the  
24 overall landings, in some cases, and that ACLs might not be the  
25 most appropriate way of managing these fisheries.  
26  
27 However, given MSA, we are faced with putting ACLs in place.  
28 One of the things very early on in the discussions that we had  
29 that was not really pursued was one aspect of the NS-1  
30 Guidelines, which I have here.  
31  
32 These are the NS-1 Guidelines and let me see if I can make this  
33 larger. In the Southeast Center's data evaluation and in some  
34 of the early discussions, we said there are three or four  
35 different ways of going about this and we laid out some  
36 methodologies.  
37  
38 The last one that we suggested in that report was to develop  
39 alternative management measures. Richard and I tried carefully  
40 reading this, but there is some flexibility in the application  
41 of the NS-1 Guidelines and it states there are limited  
42 circumstances that may not fit the standard approaches to the  
43 specification of reference points and management measures set  
44 forth in these guidelines.  
45  
46 Richard correctly noted that the next sentence starts with  
47 "These include, among other things" and then it lists off a  
48 series of specific cases where ACLs might not be the best way to



1 manage the fishery.

2  
3 It says that in these circumstances, councils may propose  
4 alternative approaches for satisfying the NS-1 requirements of  
5 the MSA set forth in these guidelines and I know that we've  
6 discussed, in previous meetings, that we have such difficulty  
7 setting these ACLs that maybe there is an alternative way of  
8 looking at this.

9  
10 In our discussions, Richard and I, we were talking about  
11 potentially effort-based metrics that were adaptive management  
12 and so we thought it would be worthwhile, in this first part on  
13 stock status or monitoring ACLs here, is -- We will rephrase,  
14 obviously, everything and no ranking at this point, but if there  
15 were a way or some effort were put forward for an alternative,  
16 quote, unquote, approach to meeting NS-1 Guidelines, that may be  
17 an option that we should once again consider.

18  
19 I think during previous meetings that what ended up happening is  
20 that it would end up being a very large amount of work and it  
21 would require very strong justifications for doing something  
22 that is very different than many other regions in the country  
23 and so we'll work on a little bit of language here in the  
24 interim and see if we can come up with a clean way of describing  
25 that.

26  
27 In terms of the specifics, we have already put a rank of 1 next  
28 to this first section and these are also asterisked and one is  
29 improved landings data. We need to study to determine the  
30 reporting rates of the fishers and we need validation of the  
31 self-reported landings.

32  
33 This can be done via the TIP data or TIP interviews and then  
34 also additional work to improve the timeliness for in-season  
35 reporting, at least monthly, so that the fishers can be given  
36 heads-up notice as to when ACLs may be being approached.

37  
38 For this section, and I've got bycatch listed in two different  
39 places, but landings only represents removals. Mortality in a  
40 population also needs to include bycatch and so we can phrase a  
41 couple of sentences about characterizing bycatch, either in the  
42 TIP information, on the data reporting forms, or through some  
43 fishery-independent means.

44  
45 We've already discussed numerous times that we need to have an  
46 improvement in the TIP sampling efforts. We must have an  
47 underlying sampling design and this should be providing length  
48 structure of the population through time and space and also

1 collection of biological samples for maturity and hard parts.  
2  
3 I did just put a note here, a reminder, that ideally we get this  
4 information from fishery-independent, because that would  
5 represent the population as a whole rather than just the sector  
6 that's being harvested, but, once again, this is going to be a  
7 question of prioritizing and we can get some of this information  
8 from the sector that's being harvested, but, once again,  
9 fishery-independent is going to be a better way to go.  
10  
11 Then we didn't really touch on the categories that we had listed  
12 out, Age, Growth, Maturity. We've got recommendations from the  
13 SSC report that we can incorporate here.  
14  
15 The Alternative Methods for Assessing Status of Stocks, I can  
16 put acoustics as an example right here. We didn't discuss the  
17 involvement of fishers in data collection. I think all of you  
18 know that I believe this is a really important one, but I'm not  
19 sure that in the research needs that it needs to be highlighted  
20 here, but I think it should be included at least as a caveat as  
21 a mechanism to collect better information.  
22  
23 **RICHARD APPELDOORN:** A better example than the acoustics would  
24 be density surveys, which is what we do with conch.  
25  
26 **TODD GEDAMKE:** Richard said that a better example than the  
27 acoustic would be density surveys or equally valid. The other  
28 one that is important and has actually come up and Bill Arnold  
29 and I have been involved in a number of discussions with our  
30 recent success with three species, the redbtail, the queen, and  
31 the silk.  
32  
33 We needed to look at those snapper units and the parrotfish and  
34 determine what do we do about stock status, because stock status  
35 is determined based on these FMP groupings. One of the  
36 questions that we had all along is are there indicator species  
37 within these groups that can represent the group as a whole?  
38  
39 What we were faced with is that there are no indicator species  
40 that are listed on the record for these groups and so some  
41 research into looking at the designation of indicator species  
42 for the FMP groups would be very helpful. That would allow one  
43 to prioritize research efforts for a species and make  
44 conclusions on a number of those species all at once.  
45  
46 The other one that we think should really be an important  
47 priority is to integrate, link, and coordinate the multiple  
48 fishery-independent data collection efforts that are ongoing in

1 the Caribbean.  
2  
3 We've got visual census work and we've got SEAMAP work and we  
4 have academic studies that are being done. In the SEDAR  
5 process, we try, during the data evaluation phase, to try to get  
6 this stuff all in one place, but an early coordination over the  
7 next five years -- If we have visual census work that is being  
8 planned, it would be really nice to pair up that work with,  
9 let's say, the white boats from NOAA that are coming down to do  
10 that work in the same area, to do comparative gear studies.  
11  
12 I think that if we can look at these multiple data collection  
13 efforts and say we need to have one study leverage information  
14 against the work of another study, we're going to get more bang  
15 for the buck if we coordinate the independent research efforts.  
16  
17 Bycatch is just listed again here and then we just had a couple  
18 other thoughts. Effort is one that we can get through the TIP  
19 information for individual trips, but there's also the fishery-  
20 independent route, where we're looking at, more or less, island-  
21 wide effort-based surveys.  
22  
23 Then the last piece that we got into is -- The other piece is  
24 that we kind of looked into is, looking at the other plan, was  
25 they made a couple of points in terms of stock structure,  
26 especially for bottom fish, using genetic and stable isotope  
27 data, and also definition of a stock.  
28  
29 I think one of the agenda items for the council meeting is  
30 looking at moving towards island-based management and one of the  
31 questions that the scientific community and headquarters is  
32 going to have is how much rationale do you have for designating  
33 stocks by island?  
34  
35 We all know that there are culturally different aspects to the  
36 way that fishing occurs on the island, but how do we define a  
37 stock and how do we integrate that into the management plans  
38 becomes important and so some priority into looking at how  
39 connected each of the different islands are in terms of  
40 recruitment and movements is important and tagging would be  
41 another way of looking at that.  
42  
43 I don't know what the current status is, but I know that there  
44 was a curtain between St. Thomas and Puerto Rico with acoustic  
45 VEMCO tags that was being pursued and I don't know if that is  
46 underway or happening, but that would be one way of looking at  
47 movements between the St. Thomas island and Puerto Rico.  
48

1 Then the corals and habitats, I had a comment in here and I'm  
2 not sure how to phrase this right now. It's not directly  
3 related to the fish FMPs, but we don't want to I guess drop that  
4 off of the list entirely.

5  
6 Obviously we've got a lot of placeholders here and no pieces  
7 hammered out, but that's kind of where we're thinking of going  
8 with this and so just because there's a lot of the edits on  
9 here, I wanted to make sure that we kept the original -- The  
10 main structural change that we made was to move the fishery-  
11 independent and the fishery-dependent out of major categories  
12 and take improved landings will be one and improved increased  
13 TIP sampling will be a second one and then we can break them up  
14 that way and also this other piece here for investigate  
15 potential alternative management approaches.

16  
17 **RICHARD APPELDOORN:** When we talk about integration of datasets,  
18 one of the datasets we should be integrating into that is MRFSS  
19 or whatever it's called now.

20  
21 **JORGE GARCIA-SAIS:** There's another study that was recently  
22 delivered that is a fishery-independent survey of mesophotic  
23 habitats that could pretty much complement some other studies  
24 performed within shelf areas. That's just for the record, so  
25 that you know that there's another piece of that.

26  
27 **BARBARA KOJIS:** I have a couple of questions. Are you going to  
28 be able to fill this out tomorrow or by tonight or -- You made a  
29 lot of comments and a lot of those aren't in there in the detail  
30 that you would need in order to follow this up later and then  
31 there's the status part that was in the Western Pacific that  
32 goes over some of what like Reni said, the mesophotic reports  
33 and stuff like that indicating what is there.

34  
35 At this stage, you may not be putting in more than just this  
36 report and that report just quickly, but would you be able to  
37 fill this out a little bit more completely?

38  
39 **TODD GEDAMKE:** I think I heard two questions and one is the  
40 status question. I won't call it up and read it, but I think  
41 that the status question was we would like MSY estimates for  
42 everything and I thought that that was one of those idealistic,  
43 non-tangible goals. That's what we all want and so putting it  
44 down didn't really get us to anything.

45  
46 I wanted to leave all the thought process on here for discussion  
47 purposes. If you look at what we have here and if I cut out all  
48 the red, you're going to end up with your outlined pieces that

1 you have.

2  
3 Our intent was more or less to have the bulleted headings for  
4 this rather than all the specific comments fleshed out and we  
5 can do that now while the conversation continues, but I figured  
6 we would want to put our whole thought process on the floor to  
7 see if people had any problems with it or would like it  
8 different, but as I commented before, I was very happy to see  
9 this is an iterative process.

10  
11 This is, for Stock Status, what are the research goals for the  
12 next five years. I am hesitant to put anything in stone in a  
13 matter of two hours, but I'm happy to pull these bullet pieces  
14 together so you've got a nice list to put up on the screen for  
15 the meeting tomorrow.

16  
17 **RICHARD APPELDOORN:** I also have a question about the whole  
18 status issue. If you look at the way Hawaii did that or the  
19 Western Pacific, they had very broad things, like assessments  
20 for everything and then some comments about where they were with  
21 that.

22  
23 I am not sure we really need to do that at this point. If we  
24 want to develop a list of priority species at this time that  
25 this is where those efforts could be, that's fine and we could  
26 do that, but I'm not sure, given what we need to do, that  
27 spending time on status right now is the best use of our time.

28  
29 **BILL ARNOLD:** Todd, you kind of had a -- That's sort of one of  
30 the things that I favor, because I think it's important and  
31 almost obligatory for us to understand how our fishery  
32 management actions affect the habitat and then there's also the  
33 specifics and I use parrotfish as the example.

34  
35 We need quantitative feedback on what a certain level of harvest  
36 implies for the habitat, because that's sort of the purpose of  
37 reducing the harvest, is to increase the health of the habitat  
38 and increase Acropora opportunities. That's a good example of  
39 that and so we need to have that quantitative feedback.

40  
41 As we get these other seven species of corals on the list, then  
42 those issues are going to expand and we're going to have to deal  
43 with these feedback loops at a greater level, ultimately to the  
44 point that everything we do is going to have implications in  
45 every direction, to the point that it becomes unmanageable, but  
46 I do think that that feedback into habitat is important.

47  
48 **RICHARD APPELDOORN:** Those are great ecosystems issues and so I

1 hope you had them in there, in your discussions, but yes, I  
2 think the point is really valuable that we are looking at doing  
3 stock assessments, but those stock assessments still are only  
4 looked at as a population point of view and we haven't talked  
5 about or couched these things, in terms of from an ecosystem  
6 point of view, how are we doing.

7  
8 There does have to be that link between what you've just talked  
9 about and the assessment process and that is something that's  
10 really missing in our debates at the moment.

11  
12 **TODD GEDAMKE:** Don't misinterpret Bill's repetition of my "ugh"  
13 and my "ugh" was describing this in a succinct way is going to  
14 be extremely difficult. I don't diminish the importance of it  
15 in any way, shape, or form.

16  
17 I think that given what we have in front of us now and what we  
18 can accomplish in five years, developing an ecosystem model that  
19 includes that habitat may be out of reach in the very near  
20 future and so making sure those links are clearly exhibited and,  
21 once again, what can we accomplish within this five-year plan  
22 without losing sight of where we want to be ten years down the  
23 line or where we want to be fifteen years down the line. I  
24 think that's very important.

25  
26 As this gets written up, that's going to be very careful  
27 language that people are going to need to help us out in making  
28 links and once we see Ecosystem and get those pieces, we're also  
29 going to need to make sure that we have complementary language  
30 in there, too.

31  
32 **BARBARA KOJIS:** That also points out, and I think that your  
33 statement is very good, is that in the long term we probably  
34 want stock status of all the species listed in the Caribbean  
35 Fishery Management Plan, but we've only got five years. This is  
36 a five-year plan and so what do we want done in that five years  
37 regarding stock status and stock assessments or what have you?

38  
39 I think that listing the species that should be targeted during  
40 this time or so many species of this list of important species  
41 may be the way to go with respect to that, but that's my  
42 opinion. Any other comments on what Todd and Richard have  
43 presented or questions that you want to ask them?

44  
45 **JORGE GARCIA-SAIS:** I have a question regarding the very first  
46 thing and that is how could we -- From like a project, research,  
47 improve the reporting status from the fishermen? What's the  
48 general idea regarding that?

1  
2 I'm kind of like -- Can something else be done from our part?  
3 Do you have any ideas, just general thoughts, about that? I  
4 couldn't really even start thinking about what are you planning  
5 or what you have in your head.

6  
7 **TODD GEDAMKE:** I think this gets into the tricky part of our  
8 realm. This is the federal Caribbean Fishery Management Council  
9 SSC and we are responsible for federal waters and we work with  
10 the territories to provide this data collection, but the data  
11 collection programs are territorial data collection programs  
12 that are funded through federal sources.

13  
14 We can provide the funding for this to be done and we can  
15 provide guidance for it to be done, but it is, in short, it is  
16 their program that we assist and so how can we improve the data  
17 reporting, there are -- As we've discussed before with the ACL  
18 process, we are asking fishermen to both report better  
19 information and also capping them at a certain level.

20  
21 There are two incentives that are driving in opposite directions  
22 right now and so how do we go about validating this? That's  
23 really the key word and we've got a couple of different options.

24  
25 One is by really getting more TIP port samplers on the ground and  
26 getting a whole lot more of that sampling done with a well-  
27 designed strategy and that will accomplish two things.

28  
29 One, we end up with much finer scale resolution data for the  
30 current year, but also, if we can match up the self-reported  
31 information to what is recorded by scientists on the dock, we  
32 can start validating those reporting rates and so I'm not sure  
33 if you followed that, but if a fisherman is TIP sampled and that  
34 TIP port sampler reports 500 pounds of fish that day, at the end  
35 of that trip, that self-reported form is supposed to be filled  
36 out.

37  
38 We currently, in the way the forms have been set up, have not  
39 been able to match up those TIP reporting forms with the self-  
40 reported forms to do that validation and so we don't have that  
41 in any setup that is meaningful at this point in time, but that  
42 is one of the top things that Steve Turner and the data and  
43 statistics group at the Center are currently working on.

44  
45 That's one of the main things there. The other thing that has  
46 changed is the new data forms that are in place and those new  
47 data forms, we have not had a full evaluation on how well  
48 they're being filled out and the reporting rates coming from

1 those, but that has also changed the dynamics of the reporting  
2 that's occurring and so there has to be a good bit of work in  
3 the near future to validate the reporting rates from the  
4 fishermen and also validate the utility of those new forms. Did  
5 I answer your question?

6

7 **JORGE GARCIA-SAIS:** Yes.

8

9 **RICHARD APPELDOORN:** On top of that is the point that Todd was  
10 making about the fact that we have incentives for fishermen to  
11 report either way. On the one hand, better data is good, but on  
12 the other hand, we lead to an overfishing situation more rapidly  
13 from a data collection point of view and not from an overfishing  
14 point of view.

15

16 If, for example, we could get away from ACLs and use that  
17 exception clause in National Standard 1, maybe we can get to a  
18 point where we're removing that disincentive to get good  
19 information and the fishermen would be more willing to come  
20 forward with that.

21

22 The other thing, of course, is trying to do some other  
23 technology stuff with like instant reporting at sea using some  
24 kind of electronic logger or phone app or something like that  
25 that might remove the memory problem, shall we say, in terms of  
26 the reporting.

27

28 **BARBARA KOJIS:** Let's go on to the next. Graciela, Bill, and  
29 myself worked on Section 2, which was the Assessment of Impacts  
30 of Current Management Regulations. We changed that title a  
31 little bit from what was on there originally.

32

33 Then we looked at the first topic and we've fleshed it out, the  
34 status of fish populations subject to year-round harvest  
35 prohibitions. As was indicated before, we continued to divide  
36 this up by the different types of regulations that fish species  
37 were subject to.

38

39 We explained a little bit and actually went through and kind of  
40 asked some of the questions that we felt needed to be asked with  
41 respect to each of these topics. We had the status of fish  
42 populations subject to year-round harvest prohibitions and we  
43 listed the species that were under that category and then asked,  
44 have these populations recovered? That was the question that  
45 was to be asked and then have they achieved the rebuilding plans  
46 and what level of harvest would be allowed, sustainably, if any?

47

48 We were looking at what is it that the research -- What



1 questions should the research answer? Then we went through and  
2 just started putting in some of the status information as to  
3 what is currently being done and what studies have been done in  
4 the past regarding this topic.

5  
6 We continued to do that with the -- The next one was the status  
7 of the parrotfish species that are prohibited to be harvested in  
8 the EEZ only, which is the midnight, blue, and rainbow  
9 parrotfish. The question was how do we define the recovery of  
10 these species? When have they recovered, in terms of management  
11 and ecosystem impacts? What would be the level of the harvest,  
12 if any, after the recovery?

13  
14 These were questions that we thought were specific to these  
15 particular species and in this particular case, we considered  
16 the status and there was a need to assess the managed species,  
17 but their take is prohibited and so surveys of known areas where  
18 they used to occur needs to be done. As far as we knew, there  
19 was nobody currently doing any research on this topic.

20  
21 Then we also looked at the status of the queen conch population  
22 and it's got different regulations in different islands, island  
23 groups. It's prohibited in the EEZ except on St. Croix. Have  
24 these populations recovered? Have they achieved the rebuilding  
25 plans? What level of harvest would be allowed, sustainable, if  
26 any? Are they providing recruits for shallow-water population,  
27 in essence in the EEZ? These EEZ populations, are they  
28 providing recruits for the shallow-water population? Is this  
29 EEZ a population refugia?

30  
31 Then we looked at some of the studies, again, that have been  
32 done and so on, but we were just quickly putting this in and so  
33 that status part is certainly not comprehensive.

34  
35 Then the next topic was the status of the fish populations in  
36 the seasonally closed areas, the mutton snapper area, Bajo de  
37 Sico, and then we did a little status section on that as well  
38 and I won't go into that in detail. You can read that.

39  
40 Then the next topic was the status of the seasonal species  
41 closures for queen conch, deepwater snapper, mutton and lane  
42 snapper, and Grouper Unit 4, which is the yellowfin, tiger, and  
43 the other large groupers.

44  
45 Then we went into the status with respect to that. Again, these  
46 regulations are different among the islands and assessments need  
47 to be conducted on an island-by-island basis or by island-group  
48 basis and the example we provided was deepwater snappers.

1  
2 Snapper Unit 1 are protected by the seasonal closure in the EEZ  
3 and St. Thomas and St. John, but not St. Croix, and only two  
4 species of the unit is protected in Puerto Rico and so there are  
5 different management regimes and population response to these  
6 obvious -- It should probably be different.

7  
8 There's no monitoring of these species during the seasonal  
9 closure except for the yellowfin grouper on St. Thomas and the  
10 west coast of Puerto Rico and the tiger grouper on St. Thomas  
11 and Vieques and these are -- I guess the Vieques is a fishery-  
12 dependent survey. Then the SEAMAP conducts transects every five  
13 years for queen conch.

14  
15 The next topic was shifts in fishing practices and we changed  
16 this one a little bit. We copied it both to the Human  
17 Communities and to this section as well and so we changed this  
18 to shifts in fishing practices and, for example, it was gear  
19 changes from nets and traps to divers, changes in fishing  
20 effort, potential introduction of escape vents.

21  
22 Gear changes result in changes to the species caught, the  
23 relative numbers of these species, the size selectivity of the  
24 species being targeted, and our ability to manage. How do these  
25 changes impact the fish community and the associated habitats?

26  
27 We were looking at this not in terms of the fishing community,  
28 the fishers, but in terms of the fish community and associated  
29 habitats and then we just summarized some of the data that has  
30 been collected, such as the commercial fishing censuses in the  
31 USVI and Puerto Rico, which provide some data on gear changes  
32 and changes in fishing effort.

33  
34 This kind of comment was repeated under the Human Communities  
35 Section. Escape vents are being tested in the USVI for fish and  
36 lobster traps and how effective is selected size, shape, and  
37 numbers of fish being caught, given the different escape vents?

38  
39 Then trap reduction programs are being considered in the USVI  
40 and if they are implemented, what is the impact on fish  
41 communities and the fishing community as well? Would this be  
42 transferable to Puerto Rico? Those were some of the questions  
43 that we asked.

44  
45 Then there was the status of the yellowtail snapper populations.  
46 There's a twelve-inch total length in the EEZ and there's a  
47 similar size limit in Puerto Rico. Theirs is fork length  
48 instead and so it's a little bit smaller. There is no size

1 limit in the USVI.  
2  
3 What is the status of the yellowtail snapper with these varying  
4 regulatory regimes and there's just a little summary of what's  
5 going on there with respect to the status of the research being  
6 done.  
7  
8 Then what is the status of the queen conch populations in St.  
9 Croix? What is the viable harvest of queen conch in St. Croix?  
10 Note the EEZ off of Puerto Rico and St. John is closed for  
11 fishing of queen conch.  
12  
13 The regulations on queen conch on St. Croix include an ACL with  
14 the EEZ and state combined of 50,000 pounds, a closure of the  
15 fishery if the ACL is reached, a 200 queen conch limit per boat,  
16 a five-month seasonal closure, and a size limit and gear  
17 restrictions. There was a little bit of discussion with respect  
18 to this.  
19  
20 Of course, we've got the -- In the status, there are surveys  
21 that have been done with SEAMAP, SEAMAP surveys and so on, that  
22 would give us some idea of what the status, but those are once  
23 every five years and so if you've got a five-year plan and  
24 you're only doing this once every five years, you may not get  
25 the information that you need.  
26  
27 **CARLOS FARCHETTE:** The 200 queen conch limit is actually only in  
28 state waters right now. It hasn't been compatible to the EEZ as  
29 yet.  
30  
31 **BARBARA KOJIS:** Okay. We will remember that. We wanted to  
32 notice that MRIP -- Have you got another comment as well,  
33 Carlos?  
34  
35 **CARLOS FARCHETTE:** On a nine-inch or three-eighths, I guess  
36 maybe you want to put a three-eighth-inch lip thickness.  
37  
38 **BARBARA KOJIS:** We can continue to fill this out. A lot of this  
39 was shorthand and then we noted that MRIP does not include spiny  
40 lobster or queen conch in their surveys and the Puerto Rico DNER  
41 is collecting data on these species from their recreational  
42 sector on an opportunistic basis and we have a recreational  
43 fishing workshop coming up where we really want to emphasize the  
44 importance of collecting data, recreational data, on these two  
45 species.  
46  
47 Then our final item was recreational bag limits were imposed in  
48 2011 and how is compliance going and what do fishers do if

1 they've gone over the regulatory limit? Do they have regulatory  
2 discards? What is the impact on the health of the fish  
3 population of these bag limits and should we have bag limits or  
4 is this a waste of time?

5  
6 Then status, right now there's no known monitoring or research  
7 of recreational harvest activities related to bag limits. MRIP  
8 conducts telephone surveys and intercepts in Puerto Rico only at  
9 this stage.

10  
11 Those were the items that we discussed under these by just going  
12 through all the regulations that were out there and coming up  
13 with kind of focal questions and then starting to put some of  
14 the information in about what's been done as far as research or  
15 monitoring or what have you.

16  
17 **RICHARD APPELDOORN:** What do you want to do about information on  
18 status? There were several things there that I could mention  
19 that would fit into that and do you want to have those just  
20 separately or do you want to discuss those now or how do you  
21 want to handle that?

22  
23 **BARBARA KOJIS:** Why don't we not discuss them now, because I  
24 would like to go through everybody's thing. Then if you can  
25 provide that to me --

26  
27 **RICHARD APPELDOORN:** If you send out the document, I can plug in  
28 my notes.

29  
30 **BARBARA KOJIS:** Maybe the best way for working with these  
31 documents is have them as separate documents and then we can put  
32 them back into the main table again and so I'll get rid of your  
33 section that has changed and everybody else's section when I  
34 send it to you and it will just be the section that Bill and  
35 Graciela and I worked on, Section 2.

36  
37 **TODD GEDAMKE:** I know I've said it before, but I think, in  
38 looking at what we presented in some of these, I just wanted to,  
39 once again, reiterate the SSC's discussion at the last meeting  
40 that developing a five-year research plan should be done over a  
41 longer period of time and done during the interim.

42  
43 I think that some of this is going to be presented to the  
44 council with very little thought prior to it. It is going to  
45 take a life of its own and the Number 1 that I saw right there,  
46 status of fish populations subject to year-round harvest  
47 prohibitions, Goliath and Nassau grouper in the U.S. Caribbean.

48

1 The council is basically in the position of managing risk based  
2 on scientific information that's involved in the process and if  
3 we are prioritizing what is research for the next five years and  
4 we have very little handle on the harvest levels in relation to  
5 MSY for virtually all of the stocks in the Caribbean, we have  
6 two species, Goliath and Nassau grouper there, that are -- What  
7 is the risk to those two species in the near term?

8  
9 They are fully prohibited, their take, and so in terms of  
10 prioritizing by a risk, in any way, shape, or form, putting  
11 these forward -- I guess I'm just throwing the hesitation on.

12  
13 If we put stuff forward now, it's going to take a life of its  
14 own and I think this is just too important to really give too  
15 many specifics at this point in time and clearly looking at our  
16 recommendations to the council are going to be -- If this is the  
17 number one thing there and it hasn't been ranked, but if it gets  
18 presented like this, this is going to be seen, as it does here,  
19 as I looked at it, that the first thing on that list is to study  
20 two species that are at no risk or there's no more management  
21 measures that can be put in place to protect these two species  
22 right now.

23  
24 **BARBARA KOJIS:** When are these two species supposed to have been  
25 recovered by? There's a recovery plan in place and there's so  
26 many years. You've got a ten-year period or something like that  
27 and that ten-year period should come up almost by the end of  
28 this five-year plan.

29  
30 Although I understand your point on this, because the  
31 prohibition of harvest probably will stay in place until  
32 something is done, I'm sure fishermen are going to be looking  
33 at, especially with respect to Nassau grouper, looking at this  
34 and going, we used to harvest these a lot and now we can't  
35 harvest them at all and we are catching them and because of the  
36 fact that you haven't done anything to figure out their status,  
37 you're not allowing us to harvest.

38  
39 What we may want to do with something like this, and this is all  
40 part of the really important discussion, is say, well, with  
41 Goliath grouper we're not going to worry about that one, because  
42 Goliath grouper may not be something that -- It's a really big  
43 fish and selling a really big fish like that, in most cases, is  
44 difficult.

45  
46 The populations there are so depressed that chances are they're  
47 not going to recover, but the Nassau grouper has the potential  
48 to come back and that would be the one I would think that the

1 fishermen would have the biggest push on.

2  
3 I guess what's important is to say these are just ideas and what  
4 you're saying is leave the species out or not -- Just say status  
5 of fish populations? If we're looking at management  
6 regulations, we've got to put in there that we've got some  
7 species that are subject to year-round harvest.

8  
9 We can say we are going to have to set priorities and we may  
10 have to drop some of these out of here and maybe that's the  
11 important thing to pass on to the council, is that right now all  
12 we're doing is going through and putting the ideas down. This  
13 is as far as we've gotten on this and with this particular  
14 thing, we looked at all the regulations.

15  
16 Maybe the council wants to bounce back and say, look, we've only  
17 got five years and this is a five-year research plan and what's  
18 the most important, as far as you're concerned, that we cover?  
19 Maybe that would be an important contribution that the council  
20 can make, because there's a number of commercial fishers on that  
21 council.

22  
23 **TODD GEDAMKE:** I guess I'm hearing that this has to be in place  
24 by December and so we had this discussion how many months ago,  
25 three or four months ago, and the decision was to have an  
26 interim plan developed and now we're sitting here, in a matter  
27 of a day, putting together a list that is now becoming very  
28 specific in terms of what types of work need to get done rather  
29 than the broader concepts.

30  
31 If we put forward a series of these, it is not comprehensive.  
32 It's what we came up with thinking on the seat of our pants. We  
33 had no thought questions sent to us about this prior to the  
34 meeting and we didn't have even a strawman set up prior to the  
35 meeting on this.

36  
37 We had the Pacific plan in place and so mine is not to strike  
38 the species, but it's just that hesitation that if we -- This is  
39 important stuff.

40  
41 If the council takes a look at all these and selects out and  
42 says I think that's the one I want to do, they should be  
43 expecting a comprehensive document from us that includes a well  
44 thought out set of research priorities and I'm just saying be  
45 cautionary in what we put forward, because this -- We don't want  
46 to present it as if we have spent the last three months  
47 developing a research plan and that's my only concern, is that  
48 pieces will be taken as fact.

1  
2 **BILL ARNOLD:** I didn't really anticipate that this table would  
3 be brought before the council tomorrow. I would hope it  
4 wouldn't be. I just thought you would be giving them a status  
5 report on what we're working on.

6  
7 To me, this is a draft that's for the rest of the SSC to work on  
8 and for us to trade with each other and add in more and take out  
9 some and this is just like a starting point, in my mind. I hope  
10 I'm not wrong about that, but that's sort of the way I  
11 envisioned it and I certainly didn't think it was going to go  
12 public. I don't think it's ready to go public.

13  
14 **BARBARA KOJIS:** I agree with you and then this could be a  
15 discussion too about what is it of this that we would actually  
16 present to the council? I can choose the topics and so on or  
17 just explain what we're planning on doing in terms of a kind of  
18 schedule of events with respect to this.

19  
20 **MIGUEL ROLON:** I concur with Todd and Bill and the idea today  
21 was to get the discussion going, but for the meeting, what I  
22 have is a one line, five-year research plan, for Barbara to give  
23 an idea of what's going on to the council.

24  
25 I would like to keep this within the SSC, because Tuesday or  
26 Wednesday we are going to introduce the issue of ACLs and that  
27 will clear a lot of the problem and the misunderstandings and  
28 everything.

29  
30 The fishery going over the ACL level that we have, we don't want  
31 to confuse that problem with this one. That will be a big mess,  
32 but at least we need to tell the council this is where we are  
33 and we are using the Western Pacific as a guideline and not to  
34 copy it and we have to tailor whatever document we prepare to  
35 the needs of the Caribbean Council area.

36  
37 Then we can tell the council that we will have, and I'm sure  
38 that the Chairman will keep his mouth shut, that we have some  
39 specifics that the SSC would like to address and in between here  
40 and December, there are a couple of other groups that will have  
41 to sit down.

42  
43 However, from this part, probably we need to have, later on,  
44 when you get the feedback from the other SSC members who are not  
45 here, you and I have to correspond so I can put a list of things  
46 that should be done before December.

47  
48 Also, the more I think about this, we are forcing the issue of

1 December, because otherwise, we don't do anything, but that  
2 doesn't mean that by December it's a do or die thing. If the  
3 group believes that we need to work on some of the issues a  
4 little bit further, then we prepare the rationale and before I  
5 put together the agenda of the council, I will not include the  
6 final decision. We can say a presentation update of the draft  
7 and that will be more specific.

8  
9 What we want here is quality and strong guidance of what we  
10 should do and remember that the documents that are coming from  
11 this five-year research plan are the documents that we are going  
12 to use, that we send to the Region and the council, to ask  
13 scientists out there or fishermen or what have you to send us  
14 proposals for the jobs that we want to undertake.

15  
16 That's what the council is after, but that's kind of difficult,  
17 because I have to put all those labels there, but we all know  
18 that this is not an easy kind of thing.

19  
20 Also, if you are right now talking among yourselves about what  
21 should be the language, whether specific or general, don't think  
22 that the council will be more -- They will be more confused and  
23 so, anyway, that's what we want to do and it's just to reiterate  
24 and endorse what Todd and Bill said.

25  
26 **BARBARA KOJIS:** I would like to see that the things are as  
27 specific as possible and that we start off trying to put  
28 specifics down so that people can look and understand what we're  
29 trying to do and then comment, change, have the discussion,  
30 because without the specifics, I think then this is going to  
31 take forever, but I think if you put down specifics and, like  
32 you say, we won't bring the table before the council, although  
33 it -- Is there any aspect where the council should be having  
34 input, that the SSC sees the council having input in the five-  
35 year plan at this stage?

36  
37 **MIGUEL ROLON:** I believe that the solution to the tomorrow  
38 meeting will be to have some key questions to the council, some  
39 specifics. How specific do you want it to be? Do you want it  
40 to show this, this, and that?

41  
42 Force the issue with them, so that you have a feedback on  
43 Wednesday so that I can put together the committees that we need  
44 and I can send that information to you and distribute it to the  
45 group here, but remember the SSC is not the plan team. The SSC  
46 can recommend other people to work on this. I believe that the  
47 key questions will be important in your report to the council.

48



1 **JORGE GARCIA-SAIS:** Just some food for thought here. Regarding  
2 the assessment of impacts of the current management regulations,  
3 I believe that by the council -- One of the main avenues that  
4 the council took was to establish some quantitative baselines  
5 for prospective evaluations of the recovery of such regulations,  
6 because the closures were performed without the baseline  
7 information.

8  
9 Now, at least in these areas, there is some quantitative  
10 baselines established and I believe that that should be  
11 established and presented to the council and then perhaps  
12 propose that monitoring would be conducted from those baselines  
13 in this five-year plan to start evaluating what's the status of  
14 the populations since the baseline, but the baselines were a  
15 matter of the priorities of the previous five-year plan. That's  
16 what I think. Maybe some weight should be given to that effort  
17 given by the council on the previous five-year research plan.

18  
19 **TODD GEDAMKE:** Thanks, Miguel, for clarifying and I was glad to  
20 hear that by December maybe we didn't have to have a final  
21 document on all this together. I think, unfortunately or  
22 fortunately, the SSC, in the interim, can probably identify the  
23 top two priorities or the top three priorities, given the fact  
24 that we have real problems with landings.

25  
26 We have real problems with what the council is going to be  
27 facing in the very near future, monitoring ACLs and what do we  
28 do about overages?

29  
30 I think there are a few things that, if we just really look at  
31 this as a sequential process, we will be able to pick off some  
32 very key components right off the bat and we can develop those  
33 other ones further.

34  
35 My point, especially about this one right here, is if you just  
36 put a period at the end, after "year-round harvest prohibitions"  
37 and make it "status of fish populations subject to year-round  
38 harvest prohibitions." and you do a few of those ideas, for  
39 example, where the SSC is discussing assessment impacts of  
40 management regulations and for example, the status of fish  
41 populations subject to harvest prohibitions, period, and then a  
42 few of those.

43  
44 The council could get a feel for where we're going with this,  
45 but without having us even discussing the details of which  
46 species or what we're doing, but I think what you've identified  
47 is a very key research component, but let's make sure that we  
48 get them all down there before we start picking and hand-

1 selecting each of them.

2

3 **BARBARA KOJIS:** Anybody else?

4

5 **RICHARD APPELDOORN:** A couple of comments. First of all, and I  
6 agree with what Todd just said, but he also said we can't do  
7 anything more to the fully protected and I don't agree with that  
8 statement.

9

10 I think that, for example, one of the things we're finding with  
11 Nassau grouper is that they're out there spawning in March,  
12 April, and May. Historically, from when they were fishing this  
13 before and what's happening in Belize and the Caymans, et  
14 cetera, it's December and January.

15

16 If we had regulations that were based on where we're going to  
17 put our enforcement effort, for example, and we weren't looking  
18 at the whole period or if we have a seasonal closure that's that  
19 extra piece of protection and it's in the wrong season, we lose  
20 that.

21

22 I think, first of all, these studies can help us target better  
23 protection, either on how to target our enforcement or just  
24 adding an extra layer on top of that no prohibition, because  
25 once a filet hits the dock, it's a filet and we have certainly  
26 been having that happen.

27

28 Another thing to consider for some of these species is what's  
29 the point of harvest? For Goliath grouper, it's not the  
30 aggregation sites, and maybe someone knows where those are, but  
31 I hear reports of mangrove grouper being harvested and that's  
32 just the juvenile stage. It's probably taken by recreational  
33 people who are not reporting it to anybody.

34

35 What's happening with these stocks is an issue. Nassau, as was  
36 pointed out, is probably the one that can recover certainly in  
37 our lifetimes and I think the importance of what we're talking  
38 about here, both at Grammanik and Bajo de Sico, is the  
39 reemergence of spawning aggregations, at least documented ones,  
40 where we didn't know about these before.

41

42 It's not the situation of what we've talked about everywhere  
43 else, protecting existing aggregations, but we are documenting  
44 something that's probably new and the fact that it can happen I  
45 think is important in understanding what our hopes are for  
46 having populations recover.

47

48 There are some added things, particularly with Nassau, that even

1 though they're fully protected, we would like to know whether  
2 our measures are in fact, as you mentioned, in line with what  
3 the recovery plan is expecting or is nothing happening and  
4 there's something else going on that we need to know?

5  
6 I think there's some importance there for that work. Where it  
7 should fall in the priority list, I'm willing to let that be a  
8 much more open question, as Todd was suggesting.

9  
10 **BARBARA KOJIS:** Very good points. Next, Number 3, is Vance and  
11 Reni and the Ecosystem.

12  
13 **JORGE GARCIA-SAIS:** Let me just start. What we did was to  
14 provide basically some bullets at least of projects that we  
15 thought that could be a priority or related projects could be  
16 spinoffs of this as priorities of ecosystem-based studies.

17  
18 As the definition of the ecosystem-based studies suggest, these  
19 are really broad, interrelated studies that it's difficult to  
20 call them apart one from the other, but essentially, we thought  
21 that it would be good to start with land/sea interactions as the  
22 broadest of terms in terms of how does land/sea interactions can  
23 influence landings and the type of landings that a given  
24 ecosystem can produce.

25  
26 It's mainly looking at it from the perspective of two different  
27 contrasting systems, one in which there is a lot of rainfall-  
28 driven loadings of nutrients and other materials, which tend to  
29 decrease benthic habitat complexity and therefore lower species  
30 diversity, but perhaps a more productive system for pelagic-  
31 derived fisheries, particularly mackerels and different types of  
32 barracudas, estuarine-type species, and the type of pelagic  
33 fishery production system.

34  
35 On the contrary, the systems that have a low loading of  
36 materials promote a high benthic habitat complexity in the form  
37 of reefs, coral reefs, and that by association, high species  
38 diversity, which then could promote fisheries of a higher  
39 variety of reef fishes, but perhaps in a lower production scale.

40  
41 The first general objective would be to analyze the relationship  
42 between watershed-specific material loading contributions, the  
43 complexity of benthic system components, and the historical  
44 fishery landing trends in terms of the pelagic versus demersal  
45 fish populations and this is because we believe that watershed  
46 management is a tool that man can regulate and by regulating  
47 watershed management, you can perhaps influence the flow of  
48 energy which actually ends up in fisheries production in

1 different directions.  
2  
3 If you allow a system to have a lot of nutrient loading, you may  
4 end up with less benthic habitat complexity, but higher pelagic  
5 fisheries production and vice versa.  
6  
7 We thought that a study along those lines, perhaps comparing the  
8 north versus the south shore, just to get a feeling of how those  
9 contrasting scenarios might influence fisheries landings, might  
10 be interesting and spin off from that.  
11  
12 Vance thought that, and I agree with him, that we are really  
13 lacking ecosystem-based studies that could tell us what the flow  
14 of energy through the system is right now, at present. The last  
15 studies that we have on food web interactions, trophic  
16 interactions, dates to probably more than twenty years or thirty  
17 years ago and they are -- The community structures of these  
18 systems have changed.  
19  
20 Not entirely, but they have changed somewhat, particularly with  
21 the disappearance of the large demersal predators and the  
22 introduction of highly, now numerically dominant, exotic species  
23 like the lionfish.  
24  
25 If you have seen my recent reports, you are going to be amazed  
26 at how the lionfish has picked up in terms of fish community  
27 structure in the reefs, particularly in the mesophotic habitats,  
28 and I want to point out that it is in the mesophotic habitats  
29 where we don't have any information and these are some of the  
30 main habitats or what is left of the demersal predators which  
31 are commercially-important species.  
32  
33 I believe that some kind of food web trophic structure analysis  
34 studies should be incorporated in the field of ecosystem-based  
35 studies.  
36  
37 We think that the relationship between benthic habitat  
38 complexity as an index influenced by live coral cover, rugosity,  
39 and the relative composition of sponges, gorgonians, and most of  
40 the reef components of a reef system in Puerto Rico and the  
41 Virgin Islands should be more carefully studied and to examine  
42 if that benthic habitat complexity is a driver of fish species  
43 diversity all the way to the top levels of the community that  
44 ends up in our top predators, which are the fishes of commercial  
45 value.  
46  
47 Does higher fish diversity promote higher abundance of sharks  
48 and of groupers or not? I thought that looking at the system

1 from the health of the habitat complexity, which if you have  
2 healthy coral reef systems, you would have higher benthic  
3 habitat complexity and that increasing benthic habitat  
4 complexity may produce a higher diversity and the end result of  
5 a very healthy coral reef ecosystem, where top demersal  
6 predators and pelagic predators are at the end of that food  
7 chain and we can derive a fish base from that.

8  
9 Otherwise, in the effect of systems with low benthic habitat  
10 complexity, i.e., dead coral reef systems, which is what we have  
11 in many areas of Puerto Rico, and a process towards reef  
12 degradation, would probably, in the hindrance of benthic habitat  
13 complexity, we might have a lower diversity and perhaps shifts  
14 of community structure towards other components, which are not  
15 necessarily the fishes that are of interest in terms of fishery  
16 production, such as groupers, snappers, and so forth.

17  
18 Other trends that we have seen from recent studies actually  
19 looking at other variables of the system in terms of what fish  
20 community structure is all about, trying to get at the initial  
21 question that we were sort of given, which we were -- I couldn't  
22 really come after it from the standpoint of, okay, what kind of  
23 fishes do we need to have healthy reefs?

24  
25 I think about it from exactly the opposite standpoint. What  
26 kind of reefs do we need to have a community structure of fishes  
27 and the parrotfish is the main example and I am going to bring  
28 the example of the parrotfish, because the two reasons relate to  
29 the other study objectives which I have put forward here.

30  
31 We have found that we have much more parrotfish in close to the  
32 land areas, to the east large shelf areas, down in oceanic  
33 islands, but the coral cover in oceanic islands, before the  
34 massive bleaching event of 2005, was much higher in oceanic  
35 islands than in land and we believe that the physical  
36 connectivity, in terms of distance, between recruitment and  
37 adult fish habitats plays a primary role in determination of  
38 coral reef community structure and that's particularly true for  
39 herbivorous fish and parrotfish is one of those taxa.

40  
41 Then we need to establish, and perhaps with more studies in this  
42 direction, to establish a role of physical connectivity,  
43 particularly measured as distance, between the juvenile and  
44 adult recruitment habitats in determining reef fish community  
45 structure on the relative abundance of top demersal predators as  
46 -- Whatever effects that you have on the community, you usually  
47 end up with these top demersal predators.

48

1 For example, what we have found is that there are no hogfish in  
2 Bajo de Sico and why? There are no mutton snappers in Bajo de  
3 Sico. There are no dog snappers or Bajo de Sico or Desecheo,  
4 very few of them, one or two, if any. Why?

5  
6 The benthic habitats are the same and the depths are the same,  
7 but the physical connectivity between recruitment habitats and  
8 adult recruitment habitats are broadly different, because at  
9 Abril la Sierra, for example, where we have all these predators,  
10 the physical connectivity within the shelf is direct and oceanic  
11 barriers separate Bajo de Sico and Desecheo from the mainland.  
12 There is something there which we have just touched very  
13 superficially.

14  
15 Also, we need to identify what are the larval, the reef fish  
16 larval, sources, because that's the other aspect of the  
17 question. Is it really the recruitment habitats or is the  
18 larval dispersal and the taxonomically-specific geographic  
19 ranges of those larvae for population replenishment requirements  
20 -- Is it that the larvae just doesn't get to these places in  
21 large amounts enough to replenish populations or is it a  
22 juvenile recruitment habitat limitation? Those are important  
23 questions that I think at the ecosystem level we need to at some  
24 point promote their studies.

25  
26 Then in terms of modeling, I am not a modeler nor is Vance, but  
27 we threw this out. We need, at some point, some kind of  
28 ecosystem modeling application based on water quality, from our  
29 top land/sea interaction ideas, benthic habitat complexity, the  
30 distance between juvenile and adult recruitment habitats, and  
31 the larvae availability question as controlling variables should  
32 be examined.

33  
34 **BARBARA KOJIS:** Any questions? We don't really have much time  
35 left and so let's just finish up with this. It's always the  
36 Socioeconomic that's left out until tomorrow.

37  
38 **RICHARD APPELDOORN:** The box at the top, is that supposed to be  
39 the overall statement or is that one of the --

40  
41 **JORGE GARCIA-SAIS:** That is something that somebody put it  
42 there. We couldn't really follow very much on that and so we  
43 started from zero. I didn't do anything on that top thing.

44  
45 **RICHARD APPELDOORN:** Is the top one -- Did you consider that's  
46 one of them and what else are we going to do?

47  
48 **JORGE GARCIA-SAIS:** I thought ecosystem-based research and what

1 kind of community structure is needed to maintain healthy reefs  
2 and then I couldn't depart from there, because --  
3  
4 **RICHARD APPELDOORN:** I would leave it at that. I think that's -  
5 - If you just take the box off of it and have it as one of the  
6 things in your list, it fits perfectly. That's why I was  
7 confused about where that came from.  
8  
9 **JORGE GARCIA-SAIS:** We departed from that. We had that idea to  
10 start with and then the list of things that we came up with was,  
11 well, maybe if we answered all these questions, we could answer  
12 the first one.  
13  
14 **RICHARD APPELDOORN:** No, I think it's a separate question just  
15 like all the other ones. I think you did a good job of hitting  
16 a lot of the key points and if that top one is one of them -- I  
17 wouldn't say you perfectly nailed it, but you're damned close.  
18  
19 **JORGE GARCIA-SAIS:** Then we'll leave it there. That's a good  
20 suggestion.  
21  
22 **MIGUEL ROLON:** I don't know whether you want to leave it there  
23 or not, but Carlos and I were talking about the letter from the  
24 Earth Justice group and they are asking this from another angle.  
25 They are saying we need the parrotfish and ban everything that  
26 affects the fish, including the fishery in the Southeast Region.  
27 That question, out of a box, is very relevant for the council to  
28 address.  
29  
30 **BARBARA KOJIS:** Can you and Vance work on putting this into the  
31 format like the Western Pacific has with the topic explained and  
32 then the status below, which sometimes further explains the  
33 topic and research that's already been done and stuff like that?  
34  
35 You had a lot more information in your discussion than you had  
36 up there and you need to put that all together, but there's  
37 going to be a committee that's going to be looking at all this  
38 and they need to know the rationale behind things and where we  
39 stand and all that.  
40  
41 If you've got this, this is the Western Pacific, and I sent that  
42 and so you can take a look at that and see how they've done it  
43 and we're just trying to, at least initially, put this together  
44 similar to what they have done.  
45  
46 **JORGE GARCIA-SAIS:** We need a hard copy, because it doesn't  
47 open. I can't open it from the message you --  
48

1 **BARBARA KOJIS:** I will just send it to you separately.  
2  
3 **JORGE GARCIA-SAIS:** Yes, please, because I tried to open it here  
4 and it's in, but I tried to open it and it doesn't open.  
5  
6 **BARBARA KOJIS:** Okay. Very good. Is there any other comment  
7 about Reni's presentation, impassioned presentation?  
8  
9 **BILL ARNOLD:** One thing I'm wondering about is their value in  
10 developing a predictive model for the location of these  
11 mesophotic reefs. I guess you guys are working along those  
12 lines and I'm particularly interested in the location of the  
13 mesophotic reefs relative to EEZ waters, because I think our  
14 federal activities may become more and more important as these  
15 mesophotic reefs become better identified and we realize what  
16 their significance and potential contributions are. I'm just  
17 wondering what your thoughts are on that relative to this plan.  
18  
19 **JORGE GARCIA-SAIS:** We have produced some baseline  
20 characterization and surveys of I believe now four or five sites  
21 of mesophotic reefs or habitats around Puerto Rico, including  
22 Vieques el Seco, Isla Desecheo, Abril la Sierra, Bajo de Sico,  
23 and now Tourmaline.  
24  
25 For all of those except Isla Desecheo, we have produced benthic  
26 habitat maps. They are limited resolution, I could say, but  
27 based on multiplicity of dives.  
28  
29 Our approach has been to examine the areas of the benthic  
30 habitats and then provide some quantitative and qualitative  
31 surveys of the benthic habitats and associated fish populations,  
32 or the predominant fish populations, from each of those main  
33 benthic habitats. That's been our main approach.  
34  
35 We have not been able to cover the entire range of mesophotic  
36 habitats, first because we have only limited access to about  
37 fifty meters and also because all our dives are decompression  
38 dives and there's a lot more to be done and so essentially we  
39 end up covering a very small percentage of the entire area.  
40  
41 We still believe that those initial efforts are a good  
42 indication of what's there and what is not there. Perhaps  
43 continued studies, as I was mentioning earlier, in terms of  
44 monitoring will certainly provide much more information and  
45 particularly may even serve to establish shifts in benthic or  
46 pelagic or fish community structure from that baseline that was  
47 produced.  
48



1 In most particles, the variability in some of the main systems  
2 that we have examined has been pretty much accounted for, at  
3 least in some, because some of them are very homogeneous  
4 habitats and where they are not, we need to do more work in the  
5 future, but we have approached this baseline characterization  
6 with as much replication as we have been able to do in each of  
7 those specific habitats. I forgot the first part of your  
8 question, but can you refresh me again what it was?

9  
10 **BILL ARNOLD:** I was wondering if you were able to develop a  
11 predictive model for the location of these things or if that  
12 would be a valid component of the five-year research plan, with  
13 the goal of figuring out just where these are relative to EEZ  
14 waters and what responsibility the council may have to take on  
15 with regard to effectively managing these mesophotic reefs.

16  
17 **JORGE GARCIA-SAIS:** If we have the bathymetric information, we  
18 usually hit them every time, because of the signature of the  
19 multibeam bathymetry. We can always -- I mean we have a very  
20 good batting average in telling them from the multibeam  
21 bathymetry signature.

22  
23 Where there is not, we go out and start our echosounder and by  
24 the signal of the echosounder, by the color of the signal, we  
25 know if it's sand, if it's rock, if it's coral, or if it's  
26 sponges, a bed of sponges, like what prevails, for example, in  
27 regolith beds.

28  
29 You see a green signal in the echosounder, whereas if it's rock,  
30 you know that there might be coral down there and then because  
31 of the rugosity -- For those two instruments, but the multibeam  
32 bathymetry is, by far, our main instrument for predicting the  
33 presence of a mesophotic reef.

34  
35 Models, perhaps at some point, could be derived from the  
36 multibeam data and the backscatter data from the multibeam  
37 bathymetry. Without that, you're almost going blind and all you  
38 have is the depth and the slope and I would say that I could  
39 even suggest a very basic model in which you could perhaps  
40 predict the benthic complexity of a mesophotic system based on  
41 the slope of the place.

42  
43 The more drastic the slope, the less there's going to be. The  
44 most stable, horizontally projected environment below a hundred  
45 feet or below thirty meters is the highest possibility you have  
46 to have a more complex system in place.

47  
48 **BARBARA KOJIS:** Is everybody willing to stay and is our recorder

1 willing to stay? Usually we run into problems with respect to  
2 that, because we can certainly continue if everybody is willing  
3 to stay. It's already twenty to six. Should we go into the  
4 Socioeconomic?

5

6 **JORGE GARCIA-SAIS:** Let's kill it in twenty minutes.

7

8 **BARBARA KOJIS:** If everybody agrees to stay, let's go.

9

10 **MIGUEL DEL POZO:** Basically, what we did is we worked on the  
11 West Pacific socioeconomic objectives or topics that they had.  
12 Some of them were very good and some others we just discarded  
13 them and some others, we basically translated them to the  
14 Caribbean reality.

15

16 Some others we merged, because they look a bit like doubling  
17 efforts and I changed my mind a bit. I'm going to start with  
18 Points 6 and 7, because they are the most basic information and  
19 it's just gathering exactly that, basic information, creating  
20 socioeconomic profiles, about the fishers.

21

22 In the original text, we had those two points set apart, but I  
23 put them together here because they could merge, because if you  
24 are able to collect and conduct a study that really gathers data  
25 about social aspects and economic aspects and the demographics  
26 further than just surveys and polls, including ethnographic  
27 research, then Point 7 will come along.

28

29 You will have a better idea of community structures, of social  
30 networks, of economic strategies, the resiliency of these  
31 communities. That's a very general idea, to have a better  
32 understanding of such an elastic, let's call it, social group.

33

34 There is a study taking place right now and I'm working on that  
35 study, where we're trying to understand the importance of what  
36 we are calling a healthy coast and by a healthy coast, we are  
37 not only talking about the physical environment, but also the  
38 communities around that coast, dependent on that coast, and that  
39 relationship with quality of life and well being.

40

41 Most of the studies normally focus on the economic side of it,  
42 but we have found that there are some social aspects and social  
43 benefits that may surpass those economic benefits from having  
44 access to a healthy resource for these fishing-dependent  
45 communities and so that could be helpful.

46

47 I just listed as well like references that came to my mind that  
48 could help in this and there is the classic fishers or workers

1 at sea and there is a very important book as well, *The State of*  
2 *Small-Scale Fisheries*, that focuses mainly on the economic  
3 development of small-scale fisheries in Puerto Rico through  
4 government interventions. It changed from a petty commodity  
5 activity to a capitalist activity and so I'm going to jump now  
6 to Point 1.

7  
8 This one was basically taken from the original as it is, but  
9 it's to improve the predictions of the responses of fishery  
10 participants and the impact of management alternatives and  
11 measures and measure new management regimes for their actual  
12 impacts on stocks, fishers, and human communities.

13  
14 I think that this is very important, because to understand  
15 primary stakeholder's views and attitudes towards the  
16 regulations and the consultation process and the implementation  
17 of those regulations, because regulations that stakeholders see  
18 as irrational, unfair, unsound regulations normally just result  
19 in zero cooperation and it's something that we really need to  
20 do. What is the perception of these resource users regarding  
21 the coming new regulations?

22  
23 Now Point Number 2 is the community perceptions regarding the  
24 resource and the aspects that cemented those perceptions and I'm  
25 leaving here -- I left here this part that is in red and it's  
26 just there from the original document, because we need to be  
27 very careful about this kind of statement.

28  
29 The original statement said that correcting the misperceptions  
30 will provide an informed community with the necessary science to  
31 act in accordance with their values.

32  
33 I am not sure if we can correct misperceptions. I don't know if  
34 there's such a thing as misperceptions, to start with. We are  
35 talking about how a group of people make sense of their natural  
36 environment and how they make sense of the physical environment  
37 and so we are, more than anything, talking about two different  
38 realities or two ways of conceptualizing the physical  
39 environment.

40  
41 That kind of statement, historically, has destroyed the  
42 communication between two epistemic cultures, if you want, and  
43 so being careful with that will be a great idea to just open  
44 again, if there ever was, a communication between these two  
45 groups.

46  
47 I am including here the importance of the traditional ecological  
48 knowledge or local ecological knowledge or indigenous ecological

1 knowledge, whatever you want to call it, and the importance of  
2 it towards the management, towards understanding the resource as  
3 well.

4  
5 We have a group of people there that it's that they have a good  
6 deal of empiric information about the resource and they see  
7 changes, because they are in contact with the resource daily and  
8 we shouldn't disregard that kind of knowledge. We should  
9 incorporate it into the management process, in my opinion.

10  
11 Carlos has a very good publication about that, that fishers  
12 knowledge of marine species assemblages, bridging between local  
13 and scientific knowledge in southeastern Puerto Rico. That is a  
14 very good article, that one.

15  
16 This is another important one that it's very pertinent, the  
17 potential impact of marine ecosystems from economic downturns on  
18 fishing pressure effort. As I said, there is -- Historically,  
19 economic downturns have been observed to affect fishing pressure  
20 effort and this could go two ways.

21  
22 With the lack of jobs, with the economic constraints, we may see  
23 a higher group of people fishing, but on the other hand as well,  
24 as Reni was saying before, the prices of local fresh fish are  
25 much higher than imported frozen fish and so the market may get  
26 affected and that happens.

27  
28 That actually was in place before all these economic problems  
29 and it's normal or it was normal to see the president of an  
30 association asking the fishermen to not go out fishing because  
31 five fishermen caught 200 pounds of yellowtail snappers each and  
32 so to move that 1,000 pounds of fish will take the fish house a  
33 week or two and that's another aspect as well.

34  
35 We have some non-institutional management taking place that we  
36 need to observe as well and market fluctuations as well have  
37 some impact on how these communities access the resource.

38  
39 Another point that I think is pertinent is that of coastal  
40 development, the impact of coastal development, such as  
41 residential development, touristic development, boat marinas and  
42 operation on marine resources and on access as well.

43  
44 As an example, there are areas that traditionally have been used  
45 as fishing grounds for bait that because of the geomorphological  
46 qualities of the area they are excellent for marine development  
47 and those places, all of a sudden, because of that kind of  
48 development, has been neglected to some of these communities and

1 so it's something that needs to be looked at down the lines of  
2 coastal gentrification.

3  
4 Lastly, the impact of global climate change, ocean acidification  
5 and sea level rises on island communities. This was taken as  
6 well from the original and I think it's important, and this is a  
7 note to myself, the one in red, and to the council as well, that  
8 addressing these kinds of issues will help to change the focus a  
9 bit from overemphasizing overfishing as the main problem into a  
10 more holistic approach, maybe a more marine ecological  
11 management approach, and as well it will create a better  
12 atmosphere for communication with primary stakeholders.

13  
14 That's basically so far what we did and anyway, it needs more  
15 work, but those are certain points that I think are very  
16 pertinent in this time.

17  
18 **MIGUEL ROLON:** That thing in red looks like a cloud of smoke.  
19 It looks like a cloud of smoke for hiding the realities of  
20 overfishing and playing the devil's advocate here and so that  
21 note to yourself, how do you translate that for the council?

22  
23 **MIGUEL DEL POZO:** That's a very --

24  
25 **MIGUEL ROLON:** This is the problem. Fishermen are always  
26 accusing the council of hiding the truth with big thick  
27 documents and jargon that they do not understand and now we're  
28 going to tell them on Tuesday, and believe me we're going to  
29 have some vociferous fishermen at this meeting, that the ACLs  
30 are over passed if we go the route that the numbers indicate now  
31 and if that happens, then after 2013, next year, we might end up  
32 with closing the EEZ to certain species or doing some drastic  
33 measures, shortening the year of fishing.

34  
35 Whatever we do to tell them about climate change and everything  
36 won't change that perspective and so anyway, I understand what  
37 you're saying here, but it's just the red note to yourself that  
38 worries me a little bit.

39  
40 **RICHARD APPELDOORN:** I will add to that by saying it's probably  
41 not in the right location. I think when you talk about -- At  
42 least the fishermen that I've talked to are talking a lot about  
43 habitat degradation and the impacts of coastal development on  
44 that.

45  
46 I think that's where that statement really belongs, because  
47 that's the thing they see every day and they're damned right  
48 about it.

1  
2 The second point I had, where you had your red thing about  
3 misconceptions, correcting misconceptions, I think what we're  
4 really talking about is reconciling misperceptions. As you  
5 said, there are two ways of looking at them and if we can get  
6 that Rosetta Stone that says hey, we're talking about the same  
7 thing and so when you expressed it this way, we're expressing it  
8 that way and let's see how the system works. That's what we're  
9 trying to get to and yes, it would be highly valuable.

10  
11 **MIGUEL DEL POZO:** Regarding Richard's comment, I totally agree.  
12 That's exactly why I said that we need to be cautious about it  
13 and not to sound like we're imposing perceptions.

14  
15 **RICHARD APPELDOORN:** It's worse, because we scientists have our  
16 own misconceptions too and the fishermen occasionally call us  
17 out on it and certainly the biggest one is the quality of the  
18 data. The misconceptions go both ways.

19  
20 **MIGUEL DEL POZO:** I totally agree with that. I was just  
21 highlighting that we need to be careful with the language about  
22 that and not to disrupt the already disrupted communication flow  
23 between the two parties.

24  
25 About Miguel's comment, basically the way that red line there --  
26 It's more about how the primary stakeholders, the fishermen in  
27 this case, understand the problem and how they see the history  
28 of management and regulations in Puerto Rico.

29  
30 I'm saying that's their perspective and, as Richard said, when  
31 you go there and talk to them, they have a lot of ideas about  
32 what the environmental problems are and some of them may accept  
33 that their actions have something to do with it and some of them  
34 may not and those ideas may be cemented in a hundred different  
35 things, from religious views to many different cultural aspects,  
36 but they also highlight the other aspects and what I'm saying  
37 basically is that historically there has been an overemphasis in  
38 that particular aspect of the whole plethora of possibilities  
39 affecting the resource.

40  
41 **JORGE GARCIA-SAIS:** I am going to agree with you, but not for  
42 that reason. I also agree that we overemphasize overfishing and  
43 one of the main reasons that I think we do is because we don't  
44 understand the system and we have very little data and the data  
45 that we use is usually not pertinent and not the data that we  
46 should be using, but it may not have anything to do with these  
47 other problems, regulatory responses in a timely matter or  
48 anything like that.

1  
2 It may just be the low carrying capacity of the system. We have  
3 species of fish listed as overfished where we have very little  
4 information and then when we go down and do the surveys, the  
5 data suggest otherwise, suggest that perhaps the system has a  
6 very low carrying capacity for those big fishes, but when you  
7 look at the size distribution, the size distribution is very  
8 close to the maximum that has ever been reported for the  
9 Caribbean.

10  
11 Those are things that are not really compatible with the concept  
12 of overfishing, but we tend to see, twenty years or thirty years  
13 after a lot of fishing has been done in Puerto Rico, we see low  
14 stocks and we tend to overemphasize the role of overfishing and  
15 so I agree with you on that, but that's not the only reason.  
16 It's not just social. There is something else.

17  
18 Unfortunately, it hurts us at the end, because it's, in my  
19 opinion, in many times, in many occasions, we are limited by the  
20 data. We are data limited, at least for many species. They  
21 have gone back to the landings data and all that that I have  
22 been talking about, which it really has a lot of uncertainty  
23 built into it.

24  
25 **BARBARA KOJIS:** I just wanted to mention that I think we need to  
26 be clear that irrespective of the cause of a fishery decline,  
27 whether it's because of coastal development, but we still need  
28 to prevent overfishing and we still need to have a sustainable  
29 fishery out there.

30  
31 There may be a lower carrying capacity now and sometimes when we  
32 look at back in the 1960s we had this and today we only have  
33 this, it may be that we can't get back, in the near term anyway,  
34 to the 1960s and that's where the scientists have to make those  
35 adjustments as well, but with the fishermen, there's --

36  
37 Irrespective of the cause, and it may not be their fault and it  
38 may not be that they're overfishing or fishing more than they  
39 were before and they were able to fish for a long time and it  
40 may be all these other things, but that was what society has  
41 decided is okay.

42  
43 It's impacting them and in essence, society is taking away from  
44 the fishermen and that's a choice that society has made and  
45 given the wealth to somebody else and in some cases, they didn't  
46 know, but I -- In many cases they have at least an idea of what  
47 they're doing, because, as you said, here's these bays and they  
48 put a marina and no longer are maybe the bait fish there or the

1 fishermen can't access them, but chances are there's a reduction  
2 in bait fish and this is a choice that's made and fishermen have  
3 to realize that.

4  
5 **MIGUEL ROLON:** I hate to tell you but it's six o'clock already  
6 and he has to go, but I'm happy with that, but just drop your  
7 inner thinking in red. The reason why we emphasize overfishing  
8 is because of the law and not because we like it.

9  
10 After this whole discussion, we are spending one week, an entire  
11 week, in Washington discussing this for the supporting of the  
12 ecosystem-based management approach to fisheries, which people  
13 thought it was going to solve all our problems immediately and  
14 we don't even agree on what ecosystem-based management is and it  
15 has been fifteen years in the making. Anyway, I believe that  
16 that paragraph is perfect without the red stuff.

17  
18 **BARBARA KOJIS:** I am going to adjourn the meeting. Thank you,  
19 everybody, very much for coming.

20  
21 (Whereupon, the meeting recessed for on August 27, 2012.)

22  
23 - - -

24  
25 August 28, 2012

26  
27 TUESDAY MORNING SESSION

28  
29 - - -

30  
31 The Scientific and Statistical Committee of the Caribbean  
32 Fishery Management Council reconvened at the El Conquistador  
33 Hotel, Fajardo, Puerto Rico, Tuesday morning, August 28, 2012,  
34 and was called to order at 9:25 o'clock a.m. by Chairman Barbara  
35 Kojis.

36  
37 **BARBARA KOJIS:** This is the SSC meeting on the 28<sup>th</sup> of August at  
38 9:25. Let's just do a quick roll call for who is here right now  
39 and if we could start with Graciela, please.

40  
41 **GRACIELA GARCIA-MOLINER:** Graciela Garcia-Moliner, council  
42 staff.

43  
44 **MIGUEL DEL POZO:** Miguel del Pozo, SSC member.

45  
46 **RICHARD APPELDOORN:** Rich Appeldoorn, SSC member.

47  
48 **BARBARA KOJIS:** Barbara Kojis, SSC chair.



1  
2 **JORGE GARCIA-SAIS:** Reni Garcia, SSC member.  
3  
4 **VANCE VINCENTE:** Vance Vincente, SSC member.  
5  
6 **BARBARA KOJIS:** I think Todd should be next door and he might be  
7 coming back to us shortly, but we need to make a presentation to  
8 the council on where we are with the five-year plan.  
9  
10 My suggestion is each of you take your tables and to just  
11 modify them and save them as a separate file with "CFMC  
12 Presentation" on them and modify them to just look at the  
13 question and status of a couple of the items, just for an  
14 example, and then look at the questions or topics and just list  
15 the topics for the rest of them, so that the council has some  
16 idea of where we're going and what we're interested in.  
17  
18 Then the other thing is to think about questions for the council  
19 regarding the plan, especially in relation to the areas that  
20 you've been working on. If you've got questions that you would  
21 like the council to consider, then ask, because this plan is, of  
22 course, just in the beginning of development right now and they  
23 may have some areas that they are particularly interested in, in  
24 terms of answering research questions, or they may have certain  
25 species or topics or what have you that they're interested in.  
26 Does that sound like a good idea for everybody?  
27  
28 **JORGE GARCIA-SAIS:** I think, Barbara, that in order to provide a  
29 full background on the status of the things that we are saying  
30 here, I can't pull it out of the top of my head all the real  
31 status of these things.  
32  
33 **BARBARA KOJIS:** What I was thinking of is I'll explain that we  
34 have to research this a lot more as far as the status and put  
35 this together and this was just a start, but it's to show what  
36 we're doing in terms of how we're setting this up and what we're  
37 going to be doing.  
38  
39 Now, I could just leave the status, because when Graciela, Bill,  
40 and I put it together, we just -- Whatever came off the top of  
41 our head, we just put it down as far as the status, to just give  
42 some idea of what was going on, but I will explain that there's  
43 far more work that's been done than we've listed here, but this  
44 just gives you an idea of what we're planning on doing and how  
45 we're addressing these things.  
46  
47 Just, for example, we looked at the status of fish populations  
48 subject to year-round harvest prohibitions and then some of this

1 applies to lots of different aspects of it, but then we did the  
2 status for this one is in the USVI that Nemeth is monitoring two  
3 spawning areas for Nassau grouper and the information being  
4 collected provides estimates and numbers and size range as well  
5 as changes of these numbers over time.

6  
7 Passive acoustic work is underway in Mona Island and Bajo de  
8 Sico to estimate abundance and timing at spawning sites and  
9 there's just one mention of one paper there, but obviously here  
10 you would have to go through and find out, because Nemeth has  
11 published a bunch of papers and stuff like that, but we might go  
12 through and list those papers and the work that's been done, but  
13 right now, we don't have the time to do that, nor do we have  
14 that information available, readily available, and so we would  
15 just do a quick overview.

16  
17 (Whereupon, a quick recess was taken.)

18  
19 **BARBARA KOJIS:** If you can just take a look at this, this is  
20 what I just put together for the table that I was doing for a  
21 layout and you may -- Each of you may have done this a little  
22 bit differently, but we had a bunch of research questions and I  
23 thought those needed to be separated.

24  
25 I don't know that everybody did this the same way and the status  
26 was just for the first three that I did and then after that, I  
27 just went through the subject areas, because the council is  
28 probably more interested in what we're -- They probably want to  
29 know something about the status of things, but at the same time,  
30 they're probably most interested in what are the topics that  
31 we're actually considering for research. This is Assessment of  
32 Impacts of Current Management Regulations. This was the  
33 regulation one.

34  
35 **RICHARD APPELDOORN:** It's just that for this beginning one  
36 you're talking about generally the strategy, which is year-round  
37 harvest prohibition. Later on, the question is specific to a  
38 stock and not the management strategy.

39  
40 In other words, you reversed the question and the target, if you  
41 will, and I like the first one, where it's the strategy we're  
42 looking at and then the question might be what species you're  
43 working on and, of course, the ones that you've listed as well.

44  
45 I'm not sure how that format might fit what I've been working on  
46 or what other people have been working on, because, like later  
47 on, the question is what's the status of conch in St. Croix,  
48 which is really not the question. The question is the

1 management strategy in St. Croix and is that working or not. Of  
2 course, it's on conch, but it's a subtle difference, but you get  
3 the point.

4  
5 **BARBARA KOJIS:** Yes, I do. I get the point and I'll make those  
6 adjustments.

7  
8 (Whereupon, a brief recess was taken.)

9  
10 **BARBARA KOJIS:** We'll start now and we'll just go over the  
11 second one, because it's right up here, and I just changed the  
12 title a little bit to "Assessment of the Impacts of Current  
13 Federal Management Regulations".

14  
15 I just checked with Graciela and, of course, our emphasis has to  
16 be on federal, but we can include, as it impacts the federal  
17 regulations, territorial regulations as well, because the  
18 federal regulations are meant to cover the population, the whole  
19 population, in some respects.

20  
21 This is the first one up there and I'm just going to go over the  
22 first one and then if you can read the other ones and make any  
23 suggestions. The first one that we had up there was the status  
24 of the fish populations subject to year-round harvest  
25 prohibitions and we discussed not including Goliath grouper,  
26 because we didn't want people to get excited about that possibly  
27 being able -- People being able to harvest that in the near  
28 future.

29  
30 Year-round harvest prohibitions, an example is Nassau grouper in  
31 the U.S. Caribbean and then the research questions were what are  
32 the trends in the abundance and size/age structure of these  
33 species, which I added.

34  
35 I thought that this is an important thing in a lot of these that  
36 we need to include. Now, maybe we don't include it here, but I  
37 think that the management measures should be affecting the  
38 abundance and the size/age structure of each species and I know  
39 that people put in grants to do various things and if they're  
40 working on a particular species and they know that this is one  
41 of the important research questions for the council, they may  
42 include that for that species and so we'll start getting  
43 information about these species through just little grant  
44 applications that are concentrating on something else but that  
45 may also say I'll take otoliths and we'll get size and age  
46 structure as well and it fits in with their research plan, to an  
47 extent.

48

1 Then the other questions were have these populations recovered?  
2 Have they achieved the rebuilding plan goals? Those may be the  
3 same question. We may just get rid of the second question.  
4  
5 Are there any comments on that, because I think the populations  
6 recovered and achieve the rebuilding plan goals would be the  
7 same. Then what level of harvest would be allowed sustainable  
8 after recovery and then there was the status and we've gone over  
9 that before.

10  
11 **GRACIELA GARCIA-MOLINER:** I think that he also looks to see if  
12 there's any Nassau over in the MCD and he also had some report  
13 of a Nassau grouper aggregation in St. Croix, but I don't know  
14 if he is continuously working on those.

15  
16 **BARBARA KOJIS:** I will change that.

17  
18 **RICHARD APPELDOORN:** Then the other thing is that Bajo de Sico -  
19 - Well, if they approve it over there, that project -- What we  
20 have is some visual census work and acoustic monitoring at Bajo  
21 de Sico, but the project that's going to go forward, hopefully,  
22 will be both acoustic monitoring and visual census monitoring of  
23 the aggregation there.

24  
25 That study also includes -- We also had acoustic monitoring at  
26 Grammanik and that would continue under that project as well and  
27 Hind Bank, but there really isn't much Nassau there, where the  
28 meter was.

29  
30 **BARBARA KOJIS:** They are monitoring, even though they only have  
31 one spawning aggregation they've found, but they are monitoring  
32 spawning aggregations in two areas?

33  
34 **RICHARD APPELDOORN:** Correct.

35  
36 **BARBARA KOJIS:** Okay. We will revise this and then discuss it  
37 with you afterwards. Why don't you just look at the next one,  
38 the status of parrotfish. Are there any comments there or  
39 corrections?

40  
41 **RICHARD APPELDOORN:** I don't have a comment on the parrotfish  
42 part, but if you're looking at this as a management strategy,  
43 the same strategy is applied to queen conch in Puerto Rico,  
44 where the EEZ is closed for conch, the same way as parrotfish  
45 here, but if you want to keep those two species separate, that's  
46 okay.

47  
48 **BARBARA KOJIS:** I did want to keep them separate, because there

1 might be different questions. The other thing is they are  
2 closed throughout the EEZ, all EEZs, in the case of the midnight  
3 and blue and rainbow, but not with respect to queen conch,  
4 because the queen conch is still open on St. Croix on Lang Bank.  
5 Any other comments?  
6

7 **RICHARD APPELDOORN:** Technically, the question on what is their  
8 impact to habitat coral reef recovery, that goes into how do we  
9 define recovery, maybe. Otherwise, I see that as an ecosystem  
10 question and so I think it's actually one of the most important  
11 things we should be looking at, but I don't know whether it goes  
12 here as opposed to the ecosystem stuff or we could have it both  
13 and then see ecosystem recommendations as well.  
14

15 **VANCE VINCENTE:** Are there other fisheries-independent surveys  
16 that have been conducted for many years by Aida on the west  
17 coast and in St. Croix and St. Thomas that they take into  
18 account all of the species and not one specifically? I know  
19 there are and so I don't know why they're not there under the  
20 status or whether they should be there, because we do have a lot  
21 of fisheries-independent data available and I don't see it being  
22 used in anything. Really.  
23

24 **RICHARD APPELDOORN:** That's one of the specific recommendations  
25 on the assessment, that these kinds of datasets start being  
26 included in a much more formal way than either they're using now  
27 or they're not even being used now. That's very specific to  
28 your point.  
29

30 **BARBARA KOJIS:** I will include that in here. When we put the  
31 status together, we haven't done that comprehensively. We just  
32 threw out the things, but it's a good point with respect to all  
33 of these other studies that have been done, both in the USVI and  
34 Aida's studies and so on.  
35

36 I think the Southeast Fisheries Science Center often are  
37 frustrated because they're narrowly focused and they're like the  
38 west coast of Puerto Rico and not island-wide or bank-wide or  
39 U.S. Caribbean-wide and so they have a hard time in coming up  
40 with a stock assessment when things aren't as comprehensive as  
41 they should be and some of their studies have tried to be much  
42 more comprehensive.  
43

44 **VANCE VINCENTE:** I also recommend to recollect historical data.  
45 For example, on parrotfish, some of the earlier work done by  
46 Schroeder and Randall and there's a lot of pieces of information  
47 from the U.S. Virgin Islands and here and there and I have not  
48 seen them integrated into our plan here. That's just a comment.

1  
2 **JORGE GARCIA-SAIS:** The point is here that not any fishery-  
3 independent survey can detect nor determine the density or the  
4 real density of midnight parrotfish. These large fish have such  
5 incredibly large foraging and home ranges that a ten-meter-by-  
6 three-meter transect will not pick it up.

7  
8 Fishery-independent surveys need to be designed, specifically  
9 designed, for the assessment of these populations. Some of them  
10 will need very long survey areas to detect the presence of these  
11 species.

12  
13 Let me give you an example. After thousands, really hundreds of  
14 thousands, of square-meter surveys by our research team, we saw  
15 two families of *Scarus guacamaia* and I believe this is the  
16 rainbow parrotfish.

17  
18 The others, we didn't even see one of them and we know that they  
19 are distributed down to 150 feet, at least, because the ones  
20 that we have seen, we have seen at 140 and 130 and so they are  
21 distributed in mesophotic habitats, but the problem is that we  
22 probably have about one family, because they do hang out in  
23 little groups.

24  
25 We have one per site, one little family per site, and so you  
26 have to go through a hundred-thousand or two or four or five-  
27 hundred-thousand square meters of benthic habitat to actually  
28 see one and so it's not a matter of going through the ten-meter-  
29 by-three transects and say let's evaluate the density of these  
30 large parrotfish.

31  
32 The same thing happens with the large snappers and the black  
33 groupers and the yellowfin groupers and all these guys. It's  
34 not just everyday typical ten-by-three transects that will  
35 serve. That's not the case.

36  
37 **BARBARA KOJIS:** Certainly that's true today, but I don't think  
38 that was true in the past, because people talk about especially  
39 the rainbow parrotfish coming in right close to shore and there  
40 were big schools of them in two-feet of water and I have seen  
41 them as well.

42  
43 **JORGE GARCIA-SAIS:** I've seen them, too.

44  
45 **BARBARA KOJIS:** Blue parrotfish in two feet of water and so on,  
46 even today in some of the bays and so on of the Virgin Islands.  
47 I think that their abundance in shallow water was high at one  
48 stage, much, much higher than it is today and they could have

1 been surveyed probably using those -- Today, they're much less  
2 common and as a consequence, you're right. Today, you really  
3 have to use other mechanisms to get numbers, density in numbers,  
4 that are reasonable to find out.

5  
6 **JORGE GARCIA-SAIS:** Unfortunately, I believe that their demise  
7 was previous to the onset of quantitative baseline studies, at  
8 least for Puerto Rico. Let me tell you, by the year 2000, which  
9 is when we started, I believe that -- Maybe there's somebody  
10 else doing a lot of stuff, but I don't know of that information.

11  
12 I think that we started the whole thing and by 1999 and 2000, at  
13 least monitoring on a regular basis, quantitative data  
14 production, those fish were gone, already gone.

15  
16 **RICHARD APPELDOORN:** The approach is really going to be  
17 frequency of occurrence in samplings and that's something that  
18 was already done and those species were specifically cited in  
19 taking the thousand-plus sites that the bio-geo group has done  
20 off Parguera and looking back at the studies that Kimmel did in  
21 1980 and 1981.

22  
23 He found a couple and the NOAA guys found none and at those  
24 levels of numbers, that frequency of occurrence change becomes  
25 significant, but it's just like you said. They're so rare now  
26 and they were -- Joe was seeing them at the shelf edge, one or  
27 two here and there.

28  
29 The impact was probably in the 1960s and 1970s and if you look  
30 at the Randall data from his trap stuff that Jim Beets has been  
31 trying to work up over the years, he was getting them in his  
32 fifty-eight samples and the next time, no, and so those impacts  
33 were really early.

34  
35 **BARBARA KOJIS:** There's even a paper by Dave Olsen that was  
36 looking at the catches in the Virgin Islands and I think  
37 something like 2 percent of the catches, two-and-a-half percent  
38 of the catches, were blue parrotfish back in the 1970s. That  
39 was a published paper.

40  
41 I'm not sure that they were -- I would have to check with him to  
42 see if he thinks those were accurately identified and so on. I  
43 don't know what the procedure was, but that really made it sound  
44 like there were a lot of blue parrotfish around back then that  
45 they were harvesting.

46  
47 **JORGE GARCIA-SAIS:** Barbara, somewhere in this document, we have  
48 sort of a mention of the need to establish long-term monitoring

1 programs based on fishery-independent surveys at the preferred  
2 habitats of these fishes in order to provide an assessment of  
3 their population status.

4  
5 **BARBARA KOJIS:** We have a lot to get through and so anyway,  
6 we've got a good -- I've added the ecosystem recommendations  
7 regarding their impact and is there any other comments on this  
8 section?

9  
10 All of this, remember, is for revision in the future and the ad  
11 hoc committee sitting down and looking at all of these and going  
12 over these in more detail and over hopefully like almost a  
13 weeklong period that they may have to look at and getting a lot  
14 of this literature maybe put together even before the meeting.

15  
16 **GRACIELA GARCIA-MOLINER:** Do you have any specific questions  
17 that you want to ask the council regarding the direction of some  
18 research or --

19  
20 **BARBARA KOJIS:** Are there any specific questions that we want to  
21 ask the council or do we just want to leave it open for them to  
22 ask questions as I go through this? These are the research  
23 questions that right now we have put down and are there any  
24 other research questions that you want or any other topics?  
25 That could be -- If there's any specific questions that we have  
26 of the council, I can certainly ask them that, too.

27  
28 **RICHARD APPELDOORN:** I don't think that's our place. We're  
29 trying to give our advice from the science side of things and if  
30 they want to come back with questions that say, all right, the  
31 council has been thinking about an approach for something like  
32 that, which has not been addressed by what you're looking at,  
33 and could you come back and address what might be the  
34 recommendations under that, then yes, we would do that, but I  
35 don't think we need to do that now.

36  
37 **BARBARA KOJIS:** Why don't we just continue going through this  
38 then? This is for the queen conch populations. Status of the  
39 queen conch population, it's a prohibited species in the EEZ of  
40 the subzones of St. Thomas, St. John, and Puerto Rico. Those  
41 are the research questions and just take a look at those and see  
42 if you have any comments or corrections or changes.

43  
44 **RICHARD APPELDOORN:** I just made some format changes, but I  
45 haven't changed the substance other than adding, as was  
46 suggested yesterday, which was really an ecosystem one, but  
47 determination of what MSYs and ACLs really should be in an  
48 ecosystem context.



1  
2 **TODD GEDAMKE:** Just for the record, I will accept any changes  
3 that Richard has made to what we've put together as a starting  
4 point on this and since it's a living document and we'll be  
5 working on it, I can add any comments later on in the process  
6 and so I have no problem with it.  
7  
8 **RICHARD APPELDOORN:** I didn't put any status or anything like  
9 that in there, because a lot of that you probably know a lot  
10 more than I do and so --  
11  
12 **TODD GEDAMKE:** I will add that later on. I just want to make  
13 sure that I have no problem with -- You have free rein to make  
14 edits this morning and I will add to it later on.  
15  
16 **BARBARA KOJIS:** Very good and what we're just doing right now,  
17 for your information, is we're just going over first the section  
18 that Graciela, Bill Arnold, and I did on the regulatory species,  
19 in essence, the species under regulation and assessments of  
20 those.  
21  
22 **TODD GEDAMKE:** One topic which did just come up this morning and  
23 this is very interesting, having these parallel meetings,  
24 because I'm sitting in that room discussing what may be put in  
25 front of the SSC and one of the topics which I hope that the SSC  
26 gets to review and comment on is the red hind.  
27  
28 There's been a slight overrun in St. Thomas on the grouper and  
29 there has been a number of public comments brought up regarding  
30 the red hind population and Rick Nemeth's work in there and so I  
31 just made the recommendation that if the SSC is going to be  
32 asked to revisit that that the Southeast Center and the Regional  
33 Office put together all the accessory information on red hind,  
34 so that we're not just looking at the spawning aggregation.  
35  
36 What I think may come back to the SSC is the recommendation to  
37 revisit it and see if we can increase our ABC based on that  
38 information and given the fact that the information is primarily  
39 coming from one site, I just wanted to make sure that we had all  
40 the other accessory information, so that the SSC would have all  
41 the information to evaluate it.  
42  
43 **GRACIELA GARCIA-MOLINER:** Can you actually bring the red hind  
44 poundage that they bring it in, because once you see what they  
45 catch, it's all red hind.  
46  
47 **TODD GEDAMKE:** When I spoke with Bonnie about her comments on  
48 the phase that we're going to be faced with now, and that is

1 going to be are there changes in reporting, are there changes in  
2 the behavior of the reporting -- This is although we're looking  
3 at information that is prior to the new forms being in place,  
4 the new forms that are species-specific in the USVI will allow  
5 us to disentangle the red hind landings from the other species  
6 landings.

7  
8 We may not have it available for 2010, but we will be able to  
9 have some species compositions that are coming in currently and  
10 so it's a good opportunity for us to look at the benefits of  
11 that species-specific reporting and how that could be used to  
12 adjust the ACLs that are already in place.

13  
14 I personally think that from the information that we have,  
15 although it is limited in space and time, there are signals of  
16 increasing abundances within that closed area, but I also very  
17 cautionary said that we need to have the information across the  
18 board, throughout the U.S. Caribbean, on that.

19  
20 We need to have the red hind as a whole and then we can also  
21 look at the landings within St. Thomas, to hopefully figure out  
22 whether we have that signal coming from all the fishermen that  
23 are harvesting grouper within St. Thomas versus just the  
24 information from Nemeth that says we've got a ninety-fold  
25 increase in the number of individuals that are being seen there.

26  
27 **BARBARA KOJIS:** I think this will give us also an opportunity to  
28 show how this data and statistics are being used to manage.  
29 This is something where the fishermen are bumping up against a  
30 wall and now we're looking at this and this is the information  
31 you provided and this is what we can get from it and this is  
32 what we can't get from it.

33  
34 Maybe fishermen will even say, later on, well, maybe we should  
35 be reporting more or we can do this and we need to be reporting  
36 more accurately or what have you. I think this may be a real  
37 good start for lessons in how science works and how important  
38 the data is.

39  
40 **TODD GEDAMKE:** That's exactly the point I just raised there too  
41 and without it being a foregone conclusion that the signals are  
42 of increased population, if that were the conclusion after the  
43 evaluation, it would once again show how that feedback works  
44 into the process and how the SSC is a functional body to look at  
45 this and how those ABC recommendations can be modified. I agree  
46 and I think this is -- It could be a really good step, both  
47 scientifically and as a process, as a validation of how the  
48 process can work.

1  
2 Thank you and if there are specific questions that come up in  
3 the next two hours, feel free to just run over and grab me, but  
4 I want to keep an eye on this conversation.

5  
6 **BARBARA KOJIS:** Thanks, Todd.

7  
8 **JORGE GARCIA-SAIS:** Just a comment on what Todd was talking  
9 about. It is my understanding that these overrun considerations  
10 are still being considered as island-specific and it's not  
11 because -- Perhaps any kind of overrun in the USVI may not  
12 necessarily affect measures in Puerto Rico or considerations  
13 need to be established across the board.

14  
15 **TODD GEDAMKE:** You make a good point and part of the discussion  
16 which I thought was going to occur today is the movement toward  
17 island-based management as opposed to the U.S. Caribbean-wide.

18  
19 There's one very important point. The ACLs are currently set up  
20 for island-based management and so there is an ACL for St.  
21 Thomas and there is an ACL for Puerto Rico, but, before you nod  
22 and say, okay, good, the overfishing definition, the OFL, is set  
23 U.S. Caribbean-wide.

24  
25 In the absolutely worst case scenario, if St. Croix overruns  
26 their ACL ten times over, once you add the ACLs up as a total,  
27 you then compare that to the overfishing limit. If there is a  
28 species that's currently not designated as overfished, if the  
29 combined ACLs for the three islands exceeds what we pass forward  
30 as the combined OFL, you could end up with an overfishing  
31 designation.

32  
33 Now, that is what part of the movement towards island-based  
34 management will hopefully avoid. Now, I try to be very clear  
35 when we're discussing this in that St. Thomas and Puerto Rico  
36 are connected by a relatively shallow shelf and so although  
37 there may be ACLs in place, any assessment is going to have to  
38 consider movements or connectivity between those two islands.

39  
40 The ACLs can be set by island, but the assessment models are  
41 going to have to consider the fact that some removals of species  
42 that do move is going to occur in one of these other islands and  
43 we do this in stock assessments in the South Atlantic and the  
44 Gulf of Mexico.

45  
46 Species like king mackerel, we have a South Atlantic stock and a  
47 Gulf of Mexico stock and those are assessed at the same time and  
48 there's mixing terms that are included, saying the Gulf stock

1 may be this amount, but we know that some of these are moving  
2 into the South Atlantic and being removed from there too and so  
3 it will make the assessment slightly more complicated, but it  
4 will get us closer to each island having the numbers specific to  
5 that island, as opposed to this one big Caribbean-wide OFL.

6  
7 **BARBARA KOJIS:** This is why they're considering having separate  
8 fisheries management plans for each island or subzone or  
9 whatever you want to call it, so they would, instead of having  
10 one big overall fisheries management plan, you would be breaking  
11 it down into St. Croix, St. Thomas/St. John, and Puerto Rico.  
12 Then you wouldn't have this problem with OFL, although you might  
13 still have the situation where you've got migration.

14  
15 **TODD GEDAMKE:** Yes and this is -- I don't want to say it's  
16 somewhat semantic, because the implications are very strong, but  
17 the way that it's legally set up does impact the way the  
18 accountability measures and the designations are applied.

19  
20 In practice, it will change things very little, but by having  
21 the FMP set up island-based, it will clean the legal aspects up  
22 of how they're managed.

23  
24 **BARBARA KOJIS:** This is so if one island, like St. Croix,  
25 overfished parrotfish by ten times or something like that, it  
26 won't then impact St. Thomas/St. John or Puerto Rico?

27  
28 **TODD GEDAMKE:** Currently, if St. Croix, and I'll just use it as  
29 an example, if they went tenfold over, then in the U.S.  
30 Caribbean, you could end up with an overfishing designation for  
31 a species.

32  
33 Todd personally, and not speaking for NOAA, I believe that the  
34 recruitment in St. Croix is going to be connected to other  
35 locations, but the adult movements of the harvested-size  
36 individuals is going to be very limited in St. Croix and so that  
37 makes absolutely sense to me, that you're not going to have the  
38 ability to punish a region that has limited connectivity of the  
39 adult population versus if you look in St. Thomas or Puerto  
40 Rico, if Puerto Rico were to overrun tenfold in a place, it  
41 wouldn't exactly translate to that tenfold increase in St.  
42 Thomas.

43  
44 We would look at it and say, okay, there's approximately 10  
45 percent -- We believe there's 10 percent movement between these  
46 two stocks and so we have to assume that there's a little extra  
47 mortality that's occurring in St. Thomas because of the overrun  
48 in Puerto Rico. It just allows a little more flexibility,

1 species-specific flexibility, in the way decisions are made.

2  
3 **JORGE GARCIA-SAIS:** This is another comment. We know that  
4 mesophotic habitats, at least the Puerto Rican EEZ, are  
5 important natural habitats for red hind and we just completed a  
6 survey on three of these sites, Bajo de Sico, Desecheo, and  
7 Abril la Sierra.

8  
9 I just want to comment that the modes of red hind were the  
10 closest of any grouper snapper group to the size of first  
11 reproduction. I don't know if that rings a bell to you and if  
12 that would be any important consideration along this process,  
13 but I just want to tell you that at least the report has been  
14 delivered to Graciela and at some point that may be available to  
15 you and if it's of any use, good for the cause. I just wanted  
16 to alert you that that report is available.

17  
18 **TODD GEDAMKE:** Not directly related, but Richard and I were  
19 talking yesterday about some Nassau grouper work that was  
20 conducted on a much smaller island and some of the spawning  
21 aggregations, groupers have been shown to go for fairly large  
22 movements into these spawning aggregations.

23  
24 For Species X, it is possible that individuals from Puerto Rico  
25 or St. Thomas may be moving across those lines to reach those  
26 spawning aggregations and so the protection of the spawning  
27 aggregation in St. Thomas, if there can be a tagging study or a  
28 study which shows the extent of the movements, the protection  
29 and the benefits of that protection of that spawning aggregation  
30 could be felt well outside of St. Thomas and it could be felt  
31 into Puerto Rico also.

32  
33 The size at harvest being close to the size of maturity is of  
34 concern. The fact that the spawning aggregation is showing  
35 dramatic increases in numbers, that's a positive and so I just  
36 made the point there, in the other room, that if this is given  
37 to the SSC right now, we're going to have difficulty, because  
38 there's going to be positive and negative signals.

39  
40 If they want the SSC to evaluate it, we need someone to put  
41 together a report that summarizes what is all the available  
42 information and show up at this meeting. Barbara, if you can  
43 make sure someone is scheduled to say here is an evaluation of  
44 all the available red hind information.

45  
46 You don't need to be preemptive on this. This is going to be a  
47 council decision directive to the SSC, but if it does come down  
48 the way I believe it's going to work out, then that report, if

1 someone is tasked with doing that, the Center or the Regional  
2 Office can send someone down that gives a full evaluation of  
3 what's available, so we can make an informed decision, as  
4 opposed to them just looking and saying we've got these greater  
5 numbers and we need you to go up. The lawyers are going to look  
6 at us and say we need the scientific information to support  
7 that.

8  
9 **BARBARA KOJIS:** Thanks, Todd. Let's just continue. Any other  
10 comments about this part? The level of harvest that would be  
11 sustainable, is that something that would really be covered  
12 under your section, Richard, or we can just repeat it or I can  
13 make a reference to see --

14  
15 **RICHARD APPELDOORN:** It would not be and so yes, I would leave  
16 it here. Again, the refugia aspect is an interesting question  
17 and I don't know whether it goes here or in the ecosystem  
18 section, because here -- I don't remember what the rationale for  
19 closing the EEZ was, but I don't think it was necessarily to  
20 create a refugia that would allow the rest of the population to  
21 increase, as opposed to just allow the population within the EEZ  
22 to increase.

23  
24 The whole issue of the really deepwater stuff that Reni has been  
25 looking at wasn't an issue when they closed it, because we  
26 didn't even know about that. Again, it's an appropriate  
27 question and I don't know where it goes.

28  
29 **GRACIELA GARCIA-MOLINER:** The queen conch was closed because  
30 there was a letter from the Southeast Fisheries Science Center  
31 saying that it was overfished and the reaction of the council  
32 was to close the EEZ west of 64/34, but the issue of the  
33 refugia, it just keeps coming up.

34  
35 I think that it doesn't matter that you repeat things, because  
36 that way, it basically shows that there is so much  
37 interconnection amongst all these topics that once you start  
38 doing things, it might answer four or five questions down the  
39 road and so repeating things is a good thing.

40  
41 **BARBARA KOJIS:** As I recall, there was a discussion of the fact  
42 that this was a refuge in the sense of the stock here may be  
43 reproducing and they may be an adult stock and the question was  
44 is they do reproduce -- There were questions about do they  
45 reproduce within the EEZ, because conch traditionally are  
46 thought to come into shallow water in order to reproduce, but  
47 obviously in some cases they do reproduce in deep water and that  
48 was one of the questions that Reni has answered.

1  
2 Then is that a -- Is that going to be a big contribution, which  
3 hasn't been answered, to the shallow-water populations or  
4 shallower-water populations of queen conch or queen conch  
5 throughout the area? It's meant to protect and provide a kind  
6 of refuge for queen conch.

7  
8 **GRACIELA GARCIA-MOLINER:** A hypothesis that needs to be tested  
9 and so that brings you down to the technology issue of using  
10 rebreathers or some other kind of technology to check out the  
11 deeper waters and associate them with the shallower waters.

12  
13 **JORGE GARCIA-SAIS:** Just a very quick question, Graciela. Did  
14 Dr. Aldana actually look at the samples that we sent?

15  
16 **GRACIELA GARCIA-MOLINER:** I haven't -- She told me that she had  
17 gotten them and that she had been looking at them, but I haven't  
18 received an answer yet and so I will send her an email right  
19 now.

20  
21 **BARBARA KOJIS:** Let me look at the next one and so these are  
22 more simple, without research questions, and I think just go  
23 through them and see if there's anything that you've got  
24 questions about or want changes to. It's just for -- Remember  
25 that we went through the regulations and then more or less came  
26 up with these topics based on each of the regulations.

27  
28 **RICHARD APPELDOORN:** In the yellowfin and yellowtail snapper,  
29 you have the research question about what is the status of the  
30 snapper population and another question that you could put in  
31 there that really fits a lot of these is an assessment of is the  
32 regulation actually being adhered to, which if there's a size  
33 limit, if you can measure the size of fish that are being  
34 caught, can you say, yes, they are in fact following the size  
35 limit in the EEZ or not.

36  
37 This has certainly showed up for years relative to say the  
38 lobster catch in Puerto Rico, which is sort of following it, but  
39 they still have a lot of shorts coming in.

40  
41 **BARBARA KOJIS:** That can be included in a lot of these areas and  
42 it has been included in some of them, but that's a good point.

43  
44 **RICHARD APPELDOORN:** Again, here, you have, for the lobster and  
45 queen conch, you bring in the recreational fishers and  
46 compliance and that. I would assume it also applied to a lot of  
47 the other stuff that we looked at.

48

1 **BARBARA KOJIS:** I will put that compliance issue right  
2 throughout this. It's a good point.  
3

4 **RICHARD APPELDOORN:** Here, you're being specific about the  
5 recreational and I think it's a whole other question,  
6 methodologically speaking, because then you really need to  
7 assess what the recreational sector is doing, which without a  
8 MRFSS program is really difficult.  
9

10 **BARBARA KOJIS:** That's where that recreational workshop is going  
11 to be important. Now we'll go to the last one and I think I  
12 need to be more specific that these are for bag limits for --  
13 Graciela, was this the recreational bag limits -- Do we need to  
14 be specific, because we've already talked about queen conch and  
15 lobster and so on and this is for parrotfish?  
16

17 **GRACIELA GARCIA-MOLINER:** For all fish. There are bag limits  
18 for all fish, snappers, groupers.  
19

20 **BARBARA KOJIS:** Okay. I will just put "all fish" in there so to  
21 make that clear that that's pertaining to the fish part. Any  
22 other comments on this, so we can get on to somebody else?  
23

24 **MIGUEL DEL POZO:** I just want to say something that doesn't have  
25 necessarily anything to do with the research questions  
26 themselves, but it's just a comment about the bag limits and it  
27 probably has something to do with the compliance.  
28

29 I am a recreational fisherman and I have no clue what the bag  
30 limits are and as I mentioned yesterday about the ACLs and the  
31 commercial fishermen I have interacted with, they don't have an  
32 idea that it's --  
33

34 **GRACIELA GARCIA-MOLINER:** It's in the EEZ. It's for the federal  
35 waters.  
36

37 **MIGUEL DEL POZO:** The bag limits, exactly, but then we should  
38 ask ourselves if, for instance, queen snapper fishers,  
39 recreational ones, which harvest them in the EEZ, have an idea  
40 about this. I think that we have a huge task in front of us  
41 about education. I think that the information has not been  
42 spread enough.  
43

44 **BARBARA KOJIS:** People get this information when they get their  
45 recreational license. It's usually available and you buy your  
46 license in the grocery store or what have you and then there's a  
47 pile of pamphlets that have the regulations in them and  
48 information where you can go online to get more information if



1 you want.  
2  
3 The issue in the U.S. Caribbean is that nobody really wants to  
4 impose any recreational license, even if it's cheap, and so it's  
5 hard to get information to people and that's, of course, one of  
6 the things the council is trying to do with their education  
7 program, but it's not easy to do.  
8  
9 **MIGUEL DEL POZO:** Just a question. The licenses are not  
10 available yet, right?  
11  
12 **BARBARA KOJIS:** They're not required yet and so they're not  
13 available. They're required in Puerto Rican waters, but --  
14  
15 **GRACIELA GARCIA-MOLINER:** They're required by law, but they're  
16 not available.  
17  
18 **BARBARA KOJIS:** In the Virgin Islands, there's no requirement  
19 for a license.  
20  
21 **MIGUEL DEL POZO:** A question. Then by law, by Law 278, I guess,  
22 which then we're talking about Regulation 6768? I think so. It  
23 was 2002, right?  
24  
25 **GRACIELA GARCIA-MOLINER:** 2008. (The rest of the comment is not  
26 audible on the recording.)  
27  
28 **MIGUEL DEL POZO:** Based on those dates, I'm pretty positive that  
29 it's Law 278 and Regulation 6768. That has been changing, but  
30 the original one is 6768 and so I think that since then the  
31 licenses were required, but we don't have them yet, like ten  
32 years after.  
33  
34 **GRACIELA GARCIA-MOLINER:** (The comment is not audible on the  
35 recording.)  
36  
37 **BARBARA KOJIS:** Any other comments and I will switch this over.  
38 Who is ready to have theirs go up on the screen for review? You  
39 guys can fight over it.  
40  
41 **RICHARD APPELDOORN:** This is based on comments that were made  
42 yesterday and my own thinking and so this is wide open for  
43 comments, suggestions, additions, et cetera. The first one was  
44 -- These are not in any order any other than the order that they  
45 came to my mind as I was jotting them down.  
46  
47 The first one is looking at the use of passive acoustics to  
48 monitor and map grouper spawning aggregations, but those

1 certainly could be applied to anything that makes noise and the  
2 status, I put down the work that we've been doing in Puerto Rico  
3 and the Virgin Islands initially through SEAMAP and now, if this  
4 proposal goes through, in conjunction with Rick Nemeth's group  
5 for looking at specifically Nassau at Grammanik.

6  
7 We've looked at quite a number of different sites for red hind  
8 and we're looking at a host of species, although we have three  
9 ones where we have the records fully documented and we're trying  
10 to get black grouper and tiger grouper into that collection.  
11 We've had loggers out, but without knowing what the actual  
12 sounds are for those species, it's hard to say who is making  
13 what noise.

14  
15 The second one is the use of active acoustics to map and monitor  
16 fish populations and so these are like split-beam sonar.  
17 There's only two that I know of. The first one is the work done  
18 by Jose Rivera, which is those research done to successfully  
19 discriminate red hind within a half a meter of the bottom at  
20 both Mona and Abril la Sierra and to detect spawning yellowfin  
21 groupers at Mona.

22  
23 Then there's the work mostly by Chris Taylor, who has been doing  
24 general hydroacoustics surveys in conjunction with the bio-geo  
25 group on the Nancy Foster cruises and then they have been  
26 putting down the ROV to try and identify what the species are  
27 that they're picking up.

28  
29 The first one has actually specifically been looking at spawning  
30 aggregations and the other one is general fish distributions. I  
31 guess the same thing has been done in the MCD, when that was  
32 mapped as well. I can add that.

33  
34 Reni has already made this point and I fully agree with him,  
35 assessment of mesophotic resources using the new techniques that  
36 are available to basically extend visual observations below  
37 conventional scuba depths.

38  
39 The big groupers, the big snappers, conch are the kinds of  
40 resources that we've been looking at and so if I've got this  
41 more or less correct, there's been mapping of habitat and  
42 baseline fish conch surveys, largely by Reni's group, for Abril  
43 la Sierra, Desecheo, Vieques, Bajo de Sico, and Tourmaline and  
44 the MCD has been done with I guess Rick and Tyler's group in the  
45 Virgin Islands, who were also using rebreathers.

46  
47 Looking at the spawning aggregations of El Seco and the Hind  
48 Bank in Grammanik Bank, again by Reni and Rick's group, and

1 distribution of fish resources relative to geomorphology in the  
2 Virgin Islands and that's our group, my group. I don't know if  
3 there's any additions we want to put in there at this time, but  
4 I tried to cover what I knew.

5  
6 The next one is to develop electronic data loggers or cell phone  
7 apps to try and increase the timeliness of reporting. I know  
8 that's being discussed and I don't know whether any progress has  
9 gone beyond that.

10  
11 I think this is the last one, use of remote sensing, and this is  
12 both satellite airborne or acoustic techniques to evaluate the  
13 distribution and changes in coral cover and rugosity and this  
14 has been done in a preliminary manner by NOAA using multibeam  
15 and LIDAR bathymetry, but that's on the scale of several meters  
16 that the rugosity -- It's not the scale that perhaps fish are  
17 really following.

18  
19 Then Roy Armstrong has done some interesting stuff with the AUV  
20 to map rugosity at a much, much finer scale, but it has not been  
21 used to re-analyze places to see whether we're having changes in  
22 rugosity as reef decline continues. That's the ones I have and  
23 so if people have ideas for other ones that should be included,  
24 I am glad to put them in.

25  
26 **BARBARA KOJIS:** Just a couple of things. Graciela worked on  
27 putting some things together for this and I'll send it to  
28 Richard, but I just wanted to make a couple of points. She  
29 listed some research questions and that's probably one of the  
30 things that the ad hoc committee can discuss, as to whether we  
31 should have research questions in here, because that may focus  
32 things a little bit more.

33  
34 Those research questions like for passive and active might be  
35 different research questions. For example, she had status of  
36 spawning aggregations and that comes under the use of passive  
37 acoustics and then her research questions were what species are  
38 using the aggregation sites? What are the fish density, size  
39 frequency distributions, and sex ratios at these sites? What  
40 are the habitats, the characteristics, of these aggregation  
41 sites? How can these aggregations be monitored with geo passive  
42 acoustics, ROVs, AUVs, and how much are these aggregations  
43 contributing to the population?

44  
45 It may be that you can say, okay, with this type of passive  
46 acoustics you can answer these research questions using these,  
47 but anyway, I will email that to you and you can see what she  
48 put together on this and then she had some status information as

1 well.

2  
3 **RICHARD APPELDOORN:** The one on Assessment really hasn't changed  
4 since yesterday, other than I've put it more formally into the  
5 table format, but it hasn't gone beyond just trying to identify  
6 priorities, in a fairly rough sense.

7  
8 It has not looked at the issues of either status or specific  
9 research questions, per se, and so it hasn't put in that. The  
10 only thing that I've added as a formal one, which came out of  
11 discussions yesterday, was determination of MSYs within an  
12 ecosystem context, especially accounting for the extensive  
13 changes in community structure that have occurred over the  
14 decades.

15  
16 Obviously that's also related to ecosystem health issues as well  
17 as just predator/prey changes and then I just listed under here  
18 other thoughts that came up that were kind of scattered through  
19 there that we really hadn't even gotten to as to what were the  
20 issues there and how do we want to frame those questions.

21  
22 It's still very much a work in progress. I didn't even want to  
23 try to do the status, because a lot of this is stuff that, to  
24 some degree, is being looked at by NMFS and since Todd had to  
25 run off, I didn't have the benefit of him to look at that and so  
26 I think at this point it was just better to kind of leave it  
27 where it is and just clean it up. Other than that Point 10,  
28 there isn't a change from yesterday. It's just you can  
29 understand it better.

30  
31 **BARBARA KOJIS:** Could you add those two items that you indicated  
32 for 10, just to make it clear, because I think those were good -  
33 - You were talking about determination of MSY and I'm trying to  
34 think of what was it that -- Especially accounting for extensive  
35 changes in community structure and there were two things that  
36 you used to explain that, two items. Was it predator/prey?  
37 There was the benthic habitat and predator/prey. It just  
38 clarifies that those are examples of changes in community  
39 structure.

40  
41 Since I need to give this presentation, when you're kind of done  
42 fooling with this, if you can just email your table to me and  
43 I'll just more or less put it together for something for a  
44 presentation. If it gets too long, I might just shorten  
45 everything, just to give people an example of what we're doing.

46  
47 Any more comments about what Richard had up here? Let's just  
48 pass that then over, the microphone and the line as well,

1 please, to Miguel del Pozo and he's going to present what he  
2 has.

3  
4 **MIGUEL DEL POZO:** Basically, I just added -- I tried to polish  
5 it a bit, what I presented yesterday, and to add some -- I tried  
6 to add some research questions, to make it more accessible for  
7 people.

8  
9 I also rearranged the order and so the first topic or research  
10 interest is to collect basic information and to make community  
11 profiles, to understand the demographic ethnicities, if they  
12 apply, unemployment, income sources, employment opportunities,  
13 et cetera, and to include information from household surveys.

14  
15 Some possible questions here are what are the economic and  
16 social contribution of recreational and commercial fishing  
17 activities and we can look at that at different levels, at a  
18 very local level, at regional levels, or national levels, even.

19  
20 What are the impacts of fishing regulations on commercial and  
21 recreational sectors and what is the size and importance of  
22 recreational fishing?

23  
24 If you look down on the status, the last thing there, I really  
25 believe that our knowledge about recreational fisheries is very  
26 limited, not only in biological terms, but in socioeconomic  
27 terms as well.

28  
29 We had some studies with MRFSS and the MRFSS at some point did  
30 some socioeconomic survey, but honestly, it's not enough to have  
31 a real grasp about this activity, at least in Puerto Rico. From  
32 what I was talking with Carlos, it's big in St. Thomas as well  
33 and so it's of major importance.

34  
35 Related to that is Point 2, which is the community structures,  
36 identities, networks, and resiliency. The important thing about  
37 this is that we can have a better idea about the industry if we  
38 understand this. It's to understand it like further than just  
39 the statistics of income or economic stuff, but it's about the  
40 culture and social relations of these communities.

41  
42 I added some possible research questions of how do we define  
43 commercial and recreational fishermen? Are our typologies about  
44 commercial and recreational fishermen in tune with the social  
45 and economic reality? What sort of social arrangements and  
46 networks do recreational and commercial fishermen show? Is  
47 there overlapping between the two sectors and what kind of  
48 strategies do fishermen implement to cope with social and

1 economic uncertainty? The status is very similar to the  
2 previous point.

3  
4 **RICHARD APPELDOORN:** A lot of these questions you have framed in  
5 a commercial versus recreational context, but I would think that  
6 the questions are actually -- Since you're talking about  
7 resilience and issues like that, that a lot of this also goes  
8 beyond the fishermen themselves and into the fishing communities  
9 and the role of women and marketers and distributors and the  
10 whole thing. I would be concerned that the research questions  
11 might force a focusing that may be more narrow than you really  
12 want.

13  
14 **MIGUEL DEL POZO:** I agree. I will say that the emphasis here on  
15 that particular point, which is Point 2, of making that  
16 distinction is because I don't really believe this in many  
17 instances.

18  
19 Actually, that has been a problem in most research of  
20 overemphasizing on a community, a fishing community,  
21 overemphasizing in the fishing activity itself and not looking  
22 at the bigger picture and all the networks that extend way  
23 farther from the geographical area, but yes, that's definitely a  
24 great point. I will have to take a look at that and rephrase  
25 some of these questions.

26  
27 **GRACIELA GARCIA-MOLINER:** One of the big issues that the  
28 fishermen have, specifically from the Virgin Islands, has to do  
29 with the market availability and the market demand for certain  
30 species, certain sizes, et cetera. Where does that fit in this  
31 extended community? Would we know how to scientifically address  
32 the issue that the fishermen are bringing to the table?

33  
34 **MIGUEL DEL POZO:** That is addressed in the next one, but to  
35 answer your question, probably the answer is not what the  
36 council would want to hear, in my opinion. To gather the data,  
37 you need long-term ethnographies, rapid assessment or surveys,  
38 to really collect that kind of data, in many instances, because  
39 many times it runs in the informal economy and under the  
40 regulations and so it's a kind of data that it takes time to  
41 collect.

42  
43 **GRACIELA GARCIA-MOLINER:** Remember this is a five-year research  
44 plan, but you are also the SSC and so you can recommend to the  
45 council that they need to look at things in the short, medium,  
46 and long term or whatever, especially with the ACLs that appear  
47 to be being debated over there.

48

1 **MIGUEL DEL POZO:** Basically, what we are saying is that the  
2 council could favor a long-term ethnographical study to address  
3 some of these issues? I don't know. That's a question.

4  
5 **BARBARA KOJIS:** It's making a recommendation to the council that  
6 that's what you need, so that it's clear to them. That's what  
7 the research questions, to a certain extent, are for, because I  
8 think it helps everybody formulate in their mind that these are  
9 the questions we're asking and sometimes they need to be  
10 broader-based, like Richard mentioned, but you can put in here  
11 that this is the way you collect -- Explain that the way to  
12 collect this information is over a long period and why. That  
13 could be maybe in the status part of it or you mention it in the  
14 questions, but you could explain it in the status.

15  
16 **MIGUEL DEL POZO:** Going back to Point 3, the patterns of  
17 resource utilization and dependence, including sources, uses,  
18 and distribution of fish in fishing communities. That was the  
19 point that Graciela brought and those questions or some possible  
20 questions, research questions, are what fishing technologies are  
21 favored today? That goes as well to what we were talking  
22 yesterday about, changes in the gears and the technologies,  
23 fishing technologies.

24  
25 Is there a shift from traditional ways of fishing, like the  
26 nasas or fish traps to other techniques like diving, which it's  
27 kind of we could say a recent activity, but it's increasing in  
28 numbers and even some communities where you don't see that many  
29 fishers at this moment, you will find a few divers.

30  
31 It seems to be a tendency of fishing communities that are at low  
32 numbers of participants to have divers and so it seems to be a  
33 very important activity lately.

34  
35 How are fishing harvests being distributed? Are the fish houses  
36 still pivotal, a pivotal point, within the distribution network  
37 or is there an alternative way of distributing and selling fish  
38 harvest? Are the fishermen going directly to restaurants? That  
39 also goes back to the other point of the overlapping of  
40 recreational and commercial fish and of camouflaged identities  
41 between these two groups.

42  
43 Another point is the community perceptions regarding marine  
44 ecosystem status and the reasons and those could be  
45 environmental, cultural, social, or economic or those  
46 perceptions. Understanding how the community sees the resource  
47 is a good starting point to expect how they're going to accept  
48 management measures.

1  
2 Some questions could be what is the perception of primary  
3 stakeholders about the marine resource status? Do they think  
4 there is a problem? Do we share those problems? Maybe we can  
5 find some common ground there and maybe we won't find some, but  
6 it's important to know to deal with working together in the same  
7 direction.

8  
9 This is an important point, this one, in my opinion, the  
10 potential impact of marine ecosystems from economic downturns on  
11 fishing pressure effort. This has been documented at least  
12 since the sugarcane plantation times and it probably goes back  
13 to the colonial times, that commercial fishers, small-scale  
14 commercial fishermen, have used different strategies.

15  
16 They have shown always -- What's going on today with this  
17 economic recession? We can ask some of these questions, like  
18 has the prevailing economic recession increased or decreased the  
19 fishing pressure?

20  
21 Has the number of commercial fishermen increased due to the lack  
22 of job opportunities or, on the other hand, are commercial  
23 fishermen fishing less due to the cost and lower demand for  
24 fresh, but more expensive, fish? Is the number of recreational  
25 fishing trips lower due to the economic problems and the high  
26 fuel costs?

27  
28 These are just some questions and the list can grow  
29 exponentially, but these are just a few questions, just some  
30 examples.

31  
32 Also, another topic is what are the direct and indirect impacts  
33 of coastal development, that being residential, touristic, and  
34 marina development and operation on marine resources, beaches,  
35 and fishing access?

36  
37 It is pertinent to address the impact of coastal development,  
38 not only on fisheries resources, but also its impact on fishing-  
39 dependent communities and some of the questions I can think of  
40 is how does recreational use of the resource affect the  
41 commercial sector and that goes directly to the development of  
42 marinas and the recreational boat industry.

43  
44 Is there a real conflict between play and work? There seems to  
45 be an antagonistic relationship between recreational and the  
46 commercial sector, but do we have really a conflict? Also, we  
47 need to address the gentrification process, if it's taking  
48 place, on fishing communities.



1  
2 Lastly, and I know very little about this, but I think it's  
3 pertinent, is the impact of global climate change, ocean  
4 acidification, and sea level rises on island communities.

5  
6 I am thinking that some of the possible research questions are  
7 what is the impact of global climate change on fish stocks of  
8 commercial value and therefore, on fishing-dependent communities  
9 and, on the other hand, how those impacts on the fish stocks of  
10 recreational value is affecting the recreational sector and how  
11 they access the resource. That's basically where I'm at at the  
12 moment.

13  
14 **BARBARA KOJIS:** One thing that I see -- I think you've done a  
15 good job on this, but in the future meetings to discuss the  
16 plan, is figuring out which of these questions should have  
17 priority or the topics as well as the questions.

18  
19 Obviously you've put up some possible questions and there's more  
20 questions, but which ones are really the ones that should be  
21 addressed first? Any other comments?

22  
23 **RICHARD APPELDOORN:** We're all going to have that problem,  
24 coming to our priorities. There were two things that I thought  
25 of that I didn't see addressed and you may want to consider.  
26 One is assessing the impact, or lack thereof, of education  
27 programs.

28  
29 I know there's a few that have been there or ongoing, I guess  
30 some by the council, but others by the local agencies. Are the  
31 fishermen really aware of the regulations, et cetera, and the  
32 rationale behind them or not?

33  
34 Clearly both the commercial and recreational sectors have the  
35 same issues and the other one, a little bit more abstract  
36 perhaps, but looking at what I would call the structural  
37 impediments to effective enforcement, which would be looking at  
38 both the federal and local agencies about how they're structured  
39 and is this really impeding their effectiveness?

40  
41 What keeps them from being out on the water and being able to  
42 effectively enforce the regulations? Are there legal problems?  
43 Are there communication problems? Are there funding problems?

44  
45 Our experience in Puerto Rico is like there's something wrong  
46 here, because they seem to have a lot of resources. Is there  
47 something else that just is not structured right or they're not  
48 educated or they're not providing the -- I don't know, but to

1 me, that's a really big question, because it always comes down  
2 to whether there's no enforcement or there's not much  
3 enforcement or whatever. If we understood why, maybe we can  
4 move toward changing that.

5  
6 **BARBARA KOJIS:** I think that's an especially important topic  
7 also in the U.S. Virgin Islands, because we've had enforcement  
8 officers that are supposed to -- They do a lot of different  
9 types of enforcement for other agencies within DPNR, but they're  
10 supposed to be enforcing fisheries regulations and they've  
11 actually stood up in meetings saying that they think that the  
12 regulations should be, in essence, thrown out and start all over  
13 again and here they are the enforcement officer.

14  
15 The attitudes of enforcement officers and education of  
16 enforcement officers and what can be done to improve the  
17 education so that they understand better.

18  
19 Part of it, I think, is not -- When I was Director, we always  
20 paid for the enforcement people out of the CFMC grant to come to  
21 the meetings because that was what I considered important. They  
22 were an important part of the fisheries management and I don't  
23 very often see enforcement people from the U.S. Virgin Islands  
24 coming to these meetings and so they don't really understand all  
25 the things that have gone on with respect to coming up with  
26 these regulations.

27  
28 **RICHARD APPELDOORN:** By the same token as you're implying, they  
29 have insight into this is really not an enforceable thing that  
30 you guys have just passed and so with the exception of the Coast  
31 Guard, which is represented at the council, there isn't a lot of  
32 feedback into the system about saying are the approaches that  
33 are being discussed actually in the realm of something that can  
34 be enforced, given the way things are structured, be it fishing  
35 communities or the ability to actually be at the point where  
36 enforcement would have to take place or whatever.

37  
38 Obviously if -- This has happened, where enforcement people are  
39 being threatened if they try to do their job and that's an  
40 impediment to enforcement and how can we get them to be more  
41 integrated into the psyche of the fishermen themselves, so the  
42 fishermen understand the value of what they're trying to do and  
43 that they're really working to help the resource as a whole.

44  
45 **MIGUEL DEL POZO:** Just a quick comment about the enforcement. I  
46 think it goes down to what I talked about yesterday about  
47 building up trust between the parties involved, but there is one  
48 -- That is a long-term thing. That is something we're not going

1 to solve by tomorrow, but there is something that I think is a  
2 major problem from what I've seen, or at least what I saw in the  
3 past.

4  
5 I don't know what the status of that is now, but it's really  
6 fixable and it's the lack of knowledge of enforcement agents, at  
7 least in Puerto Rico. It's alarming.

8  
9 I have been to workshops with them and it's just alarming and  
10 that's one of the main concerns or complaints of at least --  
11 Well, commercial and recreational fishermen actually, the fact  
12 that they've been intercepted in the past by people who are  
13 trying to fine them, let's say, because they have a red hind  
14 during the closure and in reality, they have another species.

15  
16 Some even have funny stories of someone trying to fine someone  
17 for having an undersized billfish when it was a houndfish and so  
18 anyway, the lack of knowledge is really alarming and that is  
19 very fixable, in my opinion, and I've heard as well, and maybe  
20 Graciela can add to this, that there is a real lack of resources  
21 for the law enforcement agents.

22  
23 **GRACIELA GARCIA-MOLINER:** The council participates two or three  
24 times a year in the U.S. Coast Guard Officers Training Course  
25 and sometimes -- They always invite them, but sometimes the  
26 local enforcement agents come and they were also going to  
27 include the USVI.

28  
29 There have been a number of workshops that we have conducted and  
30 other people have to educate the Rangers, but the lack of  
31 continuity, in terms of the policy that they have, it's an  
32 issue.

33  
34 In the additional comments from the public hearings that we just  
35 went to, there are a couple of comments from the fishermen that  
36 the evidence that the Rangers gather disappears, meaning that  
37 they will -- They collect the lobsters, for example, that are  
38 supposed to be undersized and then they're never found and so  
39 they're not prosecuted and the fishermen know that.

40  
41 They've decided that they are going to -- They started dumping  
42 gasoline or diesel or whatever over the lobsters. They would  
43 much rather lose them than have them taken away unfairly.  
44 Enforcement is a big issue and that's something that I wrote  
45 down to pass along to the Outreach and Education group.

46  
47 **BARBARA KOJIS:** Any other comments about this? Okay. Very good  
48 progress. Let's move the cord over to the Ecosystem group,

1 please. Let's take a two-minute break.

2

3 (Whereupon, a brief recess was taken.)

4

5 **BARBARA KOJIS:** Let's start again and look at the ecosystem-  
6 based research watershed approach that Vance and Reni have been  
7 working on and I will send it over to you guys to just go and  
8 make comments and review.

9

10 **VANCE VINCENTE:** We have a few changes that were made last night  
11 and yesterday before I left and I kind of rethought everything  
12 around a little bit and I would like to amplify it a little bit  
13 and just call it Ecosystem-Based Research: Watershed Approach,  
14 Large Spatial and Temporal Scale Studies, so that this opens up  
15 a wider gap of view and topics under this category.

16

17 If you don't like it, you can just go back and leave it  
18 Ecosystem-Based Research. It was just an idea to help me think  
19 in a broad scale.

20

21 The Topic Number 1 has changed a little bit from what I wrote  
22 yesterday. It's relationships between watershed-specific  
23 material loading contributions, complexity of benthic subsystem  
24 components, and historical fishery landing trends of pelagic and  
25 demersal fish populations.

26

27 Under this very broad topic, the three questions that came to my  
28 mind are, Number 1, how does changes, for example, historical,  
29 climatic, and recent, in watershed systems of Puerto Rico and  
30 the Virgin Islands affect reef fish complexity and fisheries  
31 landings?

32

33 This kind of fills a gap, like Barbara mentioned yesterday, that  
34 the questions should be oriented towards gaps and what I  
35 consider a gap is topics that we have brought up during many  
36 meetings and nothing has been done about it and I think that  
37 this specific question here will help explain the variability or  
38 variance of landings as a function of time.

39

40 Like, for example, if there is a significant amount of  
41 information, for example, under this topic, both historical and  
42 recent, for different watersheds, maybe forty around Puerto Rico  
43 which have been monitored by the U.S. Geological Survey and by  
44 NOAA, the National Weather Service, since 1900 and so we have  
45 over a hundred years of data now on rainfall around the island.

46

47 Something that caught my attention, in looking at this data, is  
48 a significant increase in rainfall if we look at between 1901,

1 for example, to 2010. There's a significant increases and just  
2 to give you the most recent example, during 2011, in all coastal  
3 regions of Puerto Rico, in all of the watersheds, there was an  
4 increase of 126 percent above the normal and so not the  
5 historical average, but the normal, which only includes the last  
6 three decades.

7  
8 If you were to use the historical average, it would be even  
9 higher and so I think this is significant, because most of our  
10 fisheries that are very close to shore are exposed, either  
11 directly or indirectly, to watersheds and as has been pointed  
12 out in some of the earlier studies, one of the hypotheses is  
13 that a lot of the productivity of our coastal waters,  
14 particularly of pelagic systems, are directly associated with  
15 rainfall, in the sense that together with rainfall you have  
16 increased runoff and increased nutrients being pumped into the  
17 system and this eventually will be reflected in the fisheries  
18 production.

19  
20 I think this is an important question that may help answer some  
21 of the questions that we've been asking about how do we explain  
22 landings variability as a function of things that change with  
23 the climate, which is like rainfall, just to give one example,  
24 but also an increase in the frequency and intensity of storms  
25 and hurricanes and the like. It's something to look at. Number  
26 2 is how do differences --

27  
28 **BARBARA KOJIS:** Before we get off this topic, can I just mention  
29 that besides the input of nutrients and stuff, it's just  
30 salinity and the extent of the salinity of the water probably  
31 changes.

32  
33 **VANCE VINCENTE:** Well, not really. If you look right after  
34 heavy rains, you will find that the fresh water just falls on  
35 top of the saltwater and there's very little mixing. You have  
36 wave action in very shallow areas and in very shallow areas,  
37 there is a significant change in salinity and, of course,  
38 there's bleaching.

39  
40 This is an earlier paper by the Miguel -- and Carlos --. They  
41 actually published one of the earliest reports of massive  
42 bleaching in the Fajardo area after a very strong rainfall, but  
43 it's in very shallow water.

44  
45 **BARBARA KOJIS:** The reason I mention it too is that I've seen  
46 upwelling of fresh water two miles offshore and more rainfall is  
47 going to mean more of that.

48

1 **VANCE VINCENTE:** You're right, but the direct effect of the  
2 rainfall stays on the surface, but there is a significant amount  
3 of groundwater. In fact, you can even see it in many locales  
4 when you're diving and filming. All of a sudden you see this  
5 refraction and then you can hardly take your video and that is  
6 true.

7  
8 Of course, the sediments. There is a problem with sedimentation  
9 and I am not talking about periodic stochastic events such as  
10 storms. Reefs are made for that. They can tolerate acute  
11 impacts on sediment, but now we're talking about chronic. These  
12 are chronic effects of rainfall-associated factors, which I  
13 think need to be looked at.

14  
15 **BARBARA KOJIS:** What I'm saying is these offshore aquifers that  
16 come up and so on and you've got more rainfall like this and  
17 this is chronic and they're going to be running off in these  
18 underground river systems and coming up and I suspect in St.  
19 Croix the fact that they have these two reef systems and  
20 sometimes three reef systems are in part because this is where  
21 this fresh water comes up with the sand.

22  
23 **VANCE VINCENTE:** Especially aquifers that have been  
24 contaminated. The second question addresses the differences  
25 among, for example, Puerto Rico and the U.S. Virgin Island  
26 watershed characteristics and how these affect fish species  
27 composition, production, and landings or differences in the  
28 proportion of the landing units, fishery units.

29  
30 That's something that needs to be looked at, even though, for  
31 example, St. John and St. Thomas lie within the Puerto Rican  
32 platform. St. Croix doesn't, but the major thing that we'll  
33 look at in comparing differences in relation to these broader  
34 scale factors are the fact that neither St. Croix, St. Thomas,  
35 or St. John have any permanent streams, none.

36  
37 You have discussed things in St. Croix when it rains, but  
38 there's major differences between the two and it's about time  
39 that we start looking at how these differences, geomorphological  
40 and climatic differences, may affect the types of landings, the  
41 composition of the landings, as well as the amount of the  
42 landings.

43  
44 The third one, I just threw it in there because it kind of is in  
45 harmony with this watershed ecosystem approach and it's the  
46 concept of outwelling and what is the importance of outwelling  
47 from coastal lagoons, for example, on reef fish production? I  
48 don't think that has been addressed in any management practice.

1  
2 Regarding the status, like I mentioned, there is a significant  
3 amount of information, historical and recent, available for  
4 different watersheds in Puerto Rico and the U.S. Virgin Islands  
5 from the USGS and NOAA National Weather Service since 1900.

6  
7 **BARBARA KOJIS:** What do you mean by outwelling?

8  
9 **VANCE VINCENTE:** I will go into that now. Changes in rainfall  
10 affect sedimentation, non-point source contaminants, nutrients,  
11 and other components which affect or modify benthic and pelagic  
12 community characteristics.

13  
14 Some MPAs, marine protected areas, are strongly influenced by  
15 watersheds and specifically I am citing Jobaneer. Jobas  
16 national estuarine research system is managed under NOAA and  
17 it's the only, actually, national estuarine sanctuary that we  
18 have in Puerto Rico.

19  
20 Again, they have long-term collection programs and water  
21 chemistry and physical parameters and I am talking over ten  
22 years throughout various stations distributed in Jobas Bay and  
23 then outwelling of nutrients and detrital matter from lagoons  
24 have been documented in west coast of Puerto Rico and may affect  
25 reef-associated fisheries.

26  
27 This is an earlier paper by Gary Owen. Richard, do you recall  
28 that he brought up that concept? It's a concept that areas are  
29 productive, such as many lagoons, and he was able to demonstrate  
30 how important as a nutrient and energy source these shallow  
31 lagoons are for offshore fisheries and so that's just to give  
32 you an example and I don't remember the year specifically.

33  
34 Under the second and last topic that I'm going to discuss are  
35 historical and regional differences or reef fish feeding  
36 habitats and energy pathways within and across -- I added the  
37 "within" and it was just across ecosystems, but I think within  
38 and across ecosystem food webs sustaining demersal and pelagic  
39 fisheries.

40  
41 Again, this is filling a gap, because this topic of feeding  
42 habitats and reef fish feeding behavior and ethological aspects  
43 in relation to feeding has come up in several of the meetings  
44 and the reason why it has been brought up has been because we  
45 know that the reef has changed.

46  
47 Coral and reef fish fishes are in a different habitat right now  
48 and in fact, maybe a different community and so I think it's

1 about time that we relook at feeding habitat studies.  
2 Specifically, have reef fish feeding habitats changed as a  
3 function of historical and recent changes in reef benthic  
4 community structure?

5  
6 The second research question is are there differences in feeding  
7 habit behavior associated with regional differences in watershed  
8 conditions?

9  
10 Regarding status, I need to do some more homework there, but we  
11 know there is extensive information documenting changes or  
12 degradation in coral reef community structure and that's very  
13 well established. There are hundreds of references on  
14 bleaching, coral bleaching, and corals degrading all over the  
15 world, which may be associated with climatic or regional changes  
16 in water quality conditions.

17  
18 There is existing historical studies on the feeding habits of  
19 reef fish in Puerto Rico and the U.S. Virgin Islands when  
20 Caribbean ecosystems were under pristine or under baseline  
21 conditions and so we can use that historical information, this  
22 baseline condition, for the purpose of comparing differences, if  
23 we find any, regarding the energy transfer from the benthic  
24 community to the fish communities.

25  
26 Since there has been many fish feeding habit studies conducted  
27 in the field, and there's some citations in there, as well as  
28 stable isotope ratio studies, such as the Carbon 13 and Carbon  
29 12 and I understand there are other stable isotopes being used  
30 now to determine sources of primary producers in the production  
31 of fish, especially the muscle tissue and the like.

32  
33 They have been performed to determine energy pathways within  
34 systems and an example is Joyuda Lagoon, for example. That was  
35 one of the earliest -- In fact, the first study that used  
36 isotope ratios to determine the source of protein of a lagoon as  
37 a specific within an ecosystem as well as across ecosystem food  
38 webs sustaining demersal and pelagic fisheries. Those are the  
39 two topics that I thought a lot, with the help of Reni.

40  
41 **JORGE GARCIA-SAIS:** I would like to add in this last topic that  
42 there is absolutely no information on that and we should include  
43 that, absolutely no information on the food webs of mesophotic  
44 reefs.

45  
46 It's a scenario that it's unexplored right now and even though  
47 we have a similarity of species across euphotic and mesophotic  
48 gradients, that doesn't mean that the energy pathways are the



1 same nor are these fish associated with similar food webs.

2  
3 **VANCE VINCENTE:** It's important to note that in the studies that  
4 Dr. Jose Lopez, together with --, when they were involved in  
5 that trophic dynamic study of Joyuda Lagoon, I thought that the  
6 seagrasses were the major primary energy source for the  
7 production of shrimp and fish and that and they were not.

8  
9 It was blue green algae and some rhodophytes, which were  
10 associated with the mangrove roots and seagrasses were not  
11 important and so my hypothesis was wrong, but it's very  
12 important -- It's very interesting to perform these type of  
13 studies, because you will be surprised that the things that you  
14 thought were important in sustaining secondary production were  
15 maybe not.

16  
17 **RICHARD APPELDOORN:** I would reiterate Reni's point, because --  
18 He didn't bring up the fact that if you look at the trophic  
19 structures of what we have seen down there, the indication  
20 clearly is that the trophic pathways are different than what is  
21 happening on top of the shelf and so it's not just that there's  
22 an unknown, but there's a strong indication that they are  
23 different and worthy of looking at.

24  
25 There have been a couple of actually extensive feeding studies  
26 done either on individual species or on a suite of species.  
27 Randy Clark's study in Parguera looking at movements across  
28 habitats and the feeding of fishes and what they were moving is  
29 probably the most extensive one that was done and that was  
30 published in 2009.

31  
32 There is additional data out there and it's not getting into  
33 these assessments, like you're pointing out. Another one, from  
34 your previous point, is EPA has done actually a really  
35 interesting study, I think along the south coast of Puerto Rico,  
36 looking at communities downstream of the nearest watersheds and  
37 the status of those watersheds relative to rainfall and coastal  
38 development within them. The correlation is really high. I  
39 don't think it's been published yet, but I've seen the slide  
40 presentation and so there's stuff coming up online.

41  
42 **BARBARA KOJIS:** Has the St. Croix study been published and  
43 where?

44  
45 **VANCE VINCENTE:** The EPA study on the reef metrics and how they  
46 vary as a distance from industrial sources has been published  
47 and in fact, they gave us copies of those documents and I will  
48 be more than happy to provide you with one.

1  
2 **BARBARA KOJIS:** That would be great.  
3  
4 **JORGE GARCIA-SAIS:** Should I take it from here?  
5  
6 **BARBARA KOJIS:** Yes, please.  
7  
8 **GRACIELA GARCIA-MOLINER:** One additional thing regarding the  
9 trophic issues and it's of the deepwater snappers. The one  
10 fishery that is in the EEZ --  
11  
12 **BARBARA KOJIS:** I think the deepwater snapper is in our section  
13 that we did, but probably the ecosystem part of it needs to be  
14 there.  
15  
16 **JORGE GARCIA-SAIS:** Just following up on another topic, which is  
17 dealing -- Actually, the impact that possible changes in benthic  
18 habitat complexity may have on particularly live coral cover on  
19 species diversity across an insular shelf distance gradient and  
20 we believe that this should be looked at, changes in the reef  
21 fish diversity and consequences on the end of the food chain,  
22 which is the species that are important commercially.  
23  
24 To be looked at also in light of distance from shore, because  
25 the different systems may have different responses in terms of  
26 the relationship between the benthic habitat complexity and  
27 species diversity.  
28  
29 Some of the main research questions would be how changes in live  
30 coral cover affect the overall complexity of reef benthic  
31 habitats, because the reef benthic habitat is an index among  
32 which live coral cover is one of the components, but other  
33 components also affect habitat complexity, such as rugosity, for  
34 example, and live sponges, sponge coral, gorgonian cover.  
35  
36 All those components of habitat complexity actually are  
37 involved, but then how does live coral cover affect the overall  
38 complexity when, for example, drastic changes occur associated  
39 with bleaching and mortality?  
40  
41 Then amongst benthic habitat complexity components, which are  
42 more important as regulators of fish community structure? Is  
43 rugosity more important than live coral or are sponges -- What  
44 is the role of sponges and gorgonians and the overall specific  
45 components in terms of structuring the fish community?  
46  
47 Then with the advent of alternatives for artificial reef  
48 structures, may they play an important role as reef restoration

1 tools? Those are questions that may be important either at  
2 present or in the near future.

3

4 We have some of the rationale for this and it's that from the  
5 large database of reef fish assemblages from natural research in  
6 Puerto Rico, we have been developing a multivariate analysis of  
7 these factors in the structure of coral reef communities from  
8 these reefs and we have found that these are -- Distance from  
9 shore, rugosity, coral cover, algal cover are important  
10 components that explain most of the variability in terms of fish  
11 assemblages and the relative abundance of fishes in these  
12 communities.

13

14 Then one of the main questions still is are the temporal  
15 variations or shifts in benthic habitat complexity, as  
16 influenced by climate change and other causes, may drive  
17 variation of fish community structure and affect the status of  
18 commercially-exploited top demersal and pelagic fish  
19 populations.

20

21 To what extent this has been examined, I believe it's very  
22 superficially and a lot of research needs to be conveyed towards  
23 trying to examine what is going to be the impact or what has  
24 been the impact of this degradation up until now and what may be  
25 the impact of future degradation of reef habitat complexity.

26

27 Then also, in terms of the differences that we have seen in  
28 terms of fish community structure between different sites that  
29 we have surveyed, one of the most striking factors is the  
30 distance from shore and we have seen that not only for the  
31 larger fishes that are commercially important, but we have seen  
32 very strong signals of this on the small fish, on the demersal  
33 fish, that you can actually assess with a ten-by-three transect.

34

35 One of the main hypotheses, after these preliminary analyses, is  
36 that the physical connectivity or the distance between juvenile  
37 and adult recruitment habitats is determining reef fish  
38 community structure and by that, the associated abundance of top  
39 demersal predators.

40

41 Specific questions along this topic would be is the availability  
42 of juvenile recruitment habitats limiting density and  
43 replenishment of commercially-important reef fish and shellfish  
44 populations?

45

46 Because we have seen that they are not completely absent, but  
47 there are very small populations, then what are the mechanisms  
48 that allow these populations to thrive in small numbers at

1 oceanic sites?

2

3 The reasoning behind this is it may not be overfishing. It may  
4 just be a very small carrying capacity for these populations or  
5 that just the recruitment habitats are not there and so is  
6 overfishing a factor regulating the status of snapper, hogfish,  
7 and queen conch populations in oceanic mesophotic habitats,  
8 because these are the populations that are in much higher  
9 abundances and densities, or densities, I should say, as adults  
10 in areas like Abril la Sierra, where there is a direct  
11 connectivity, direct physical connectivity, between recruitment  
12 and adult sites, adult recruitment sites or adult habitat sites,  
13 compared to oceanic areas where there are very, very few numbers  
14 or absent at all.

15

16 That is a very sharp difference in terms of the status of the  
17 populations of these species in the sites that we have examined.  
18 You will not see a lobster in Bajo de Sico or Desecheo, but  
19 there's a lot of them in Abril la Sierra and likewise, you have  
20 a lot of queen conch at Abril la Sierra but a very few small  
21 populations at Bajo de Sico and Desecheo, even though the  
22 benthic habitats are the same and the depths are the same.  
23 There's some signals in terms of physical connectivity between -

24 -

25

26 **VANCE VINCENTE:** I have a question. Regarding the availability  
27 of juvenile recruitment, are you referring to the recruiting  
28 itself of these large predators or the lack of juvenile  
29 recruitment as a lack of prey to these top predators?

30

31 **JORGE GARCIA-SAIS:** I am talking about the recruitment habitats  
32 within the mesophotic habitats are not the recruitment habitats  
33 for juveniles. Most of the fish of these species that we are  
34 talking about are found there as adults only or very close to  
35 adulthood and so those are -- These are recruitment habitats for  
36 adults and not for juveniles.

37

38 Now, the recruitment habitats for the juveniles evidently are  
39 not there and so the fact that several of these species don't  
40 show healthy populations or are absent at these mesophotic sites  
41 may suggest that one of the reasons for their absence there,  
42 since the adult habitat is there, is that the recruitment  
43 habitat is not, the juvenile recruitment habitat is not.

44

45 The physical discontinuity between the juvenile recruitment  
46 habitat and the adult recruitment habitat may actually be  
47 limiting the health or the density of the adult populations at  
48 the mesophotic habitats of oceanic sites.

1  
2 That is a theory and that is important to ascertain, because we  
3 have been trying to examine management measures as no fishing or  
4 fishing closures and so forth and to expect like a recuperation  
5 of these species, where there might be other factors very  
6 importantly determining the status of these populations in these  
7 areas.

8  
9 That's why these recent fishery-independent surveys -- Actually,  
10 I am not going to go through it, because I think I have already  
11 said what the rationale is for this, but it is very interesting  
12 to see the sharp differences between Abril la Sierra and the  
13 oceanic sites keeping more or less the similar benthic habitat  
14 types and depths in terms of the structure of the commercially-  
15 important reef fish communities there and particularly the case  
16 of queen conch, the case of hogfish, and the case of the large  
17 snappers, cubera, dog, and mutton.

18  
19 I don't think that that has been brought up before here and I  
20 wanted to make sure that I put this upfront. Also, the other  
21 side of the coin could be just the ability of the larvae of  
22 these fishes to reach there in quantities high enough to provide  
23 replenishment rates that would keep the populations going,  
24 either growing or stable.

25  
26 We don't know if that is so. There is a couple of studies that  
27 Jenny Ramirez and myself conducted in the early 2000s and then  
28 the research that has been going from the Southeast Fisheries  
29 Center, which I think have provided a pretty good idea of what  
30 is the fish larvae that are there and what is their  
31 distributions across oceanic gradients, but I think that much  
32 more work needs to be done, particularly at oceanic island  
33 passages, to analyze the flux and developmental stages of these  
34 commercially-important reef fish larvae across the oceanic  
35 barriers.

36  
37 As a final topic, which I think I'm going to merge right here  
38 with what Vance was talking about in the beginning, is to  
39 develop ecosystem modeling applications based on water quality,  
40 benthic habitat complexity, distance between juvenile and adult  
41 recruitment habitats and larval availability as controlling  
42 variables of community structure and perhaps of the status on  
43 the health of commercially-important fish populations.

44  
45 Some of the specific research questions would be can watershed  
46 restoration efforts have measurable changes on the community  
47 structure of marine subsystems, particularly -- For subsystems,  
48 I consider not only the health of coral reefs, but perhaps the

1 health of seagrasses, the health of mangrove communities,  
2 mangrove root communities, and so forth.

3  
4 Then what changes or translocations of energy flow and food web  
5 interactions can be expected as a result of watershed  
6 restoration initiatives? For example, in let's take San Juan  
7 Bay and San Juan Bay has several large rivers discharging and  
8 loading huge amounts of nutrients into that watershed, into the  
9 embayment.

10  
11 If you would cut or divert these rivers from loading that amount  
12 of nutrients there, what kind of translocations, in terms of  
13 community structure, can be expected? Are we going to see less  
14 mackerels or less mojarra or less estuarine species and more and  
15 more corals or coral reef-related communities?

16  
17 Once you start modifying the influxes or the loadings of  
18 nutrients into an environment, you can expect changes to happen  
19 that will actually end up in the top trophic levels of the  
20 system, which is what we eat.

21  
22 I believe that this can go far beyond the Guanica Bay effort and  
23 perhaps we can even look at these modifications in terms of the  
24 entire coastline of Puerto Rico and perhaps some kind of a study  
25 could be done perhaps looking at differences between the north,  
26 the west, and the south coast of Puerto Rico in terms of  
27 material loadings and what are the fishery landings that are  
28 common from those different coastlines.

29  
30 What are the implications of such restoration measures for the  
31 ecosystem-related fishery resource? That's actually what I was  
32 telling and the reality that we face when we look at this  
33 potential research is that large-scale manmade modification of  
34 some of the largest watersheds in Puerto Rico associated with  
35 agricultural, domestic, urban, and/or industrial development  
36 were performed during the last fifty or sixty years without the  
37 provision of quantitative baselines of monitoring studies that  
38 would have evaluated the effect of the marine ecosystem with its  
39 corresponding fishery implications.

40  
41 Essentially, that pristine environment was never characterized  
42 and so we have to depart from new baselines in order for these  
43 prospective evaluations to be made. I am not going to go  
44 through the entire thing, but I think that the basic ideas are  
45 conveyed there.

46  
47 **RICHARD APPELDOORN:** I think he has done a really good job  
48 pointing out the topic areas and the questions involved. I

1 think there is a lot more work out there that pertains to some  
2 of these things, but basically, it's on target.

3  
4 **BARBARA KOJIS:** One of the things I just want to mention is  
5 we're putting together a five-year research plan and we have to  
6 decide how we're going to do it eventually, before the next  
7 meeting, because obviously we can use this to kind of put down  
8 all the questions and topics and everything else and then  
9 prioritize what needs to be done and leave the other topics in  
10 there as these are number-one priorities, based on what the  
11 council wants done as well as what we think are the most  
12 important.

13  
14 Then we could have our number-two and three and so on that  
15 people may be able to fit in that are still important things to  
16 do that maybe somebody even someplace else is doing research and  
17 sees that this is one of the topics and comes in and does some  
18 of the work for it.

19  
20 When we have the ad hoc committee meeting or whatever, that's  
21 the opportunity and then with the SSC again to assign priorities  
22 for all of this and with the ad hoc committee, they presumably  
23 will be deciding how much they want to focus the five-year plan  
24 or whether they want to make sure everything is there and then  
25 just set priorities. Graciela, did you want to say something?

26  
27 **GRACIELA GARCIA-MOLINER:** The only thing was that at this stage  
28 and with the plan, basically what you are doing is that -- We  
29 can send that to the funding agencies and things like that and  
30 so you don't have to review all of the literature, et cetera, in  
31 providing the status of that topic and so this is just a blip,  
32 because if not, we're not going to finish.

33  
34 **BARBARA KOJIS:** Some of it is to say, okay, this was work that's  
35 already been done and this is what still needs to be done and  
36 you don't necessarily have to go into it in detail, but I think  
37 we need to know something of how important is this topic and  
38 then where do we stand with it and where do we still need to  
39 move forward with it?

40  
41 You need to know some of the information and that also would be  
42 really valuable for somebody who is coming into the topic, that  
43 there's a bunch of the literature out there that's mentioned in  
44 the plan.

45  
46 People can look and see what it is and what's been done and not  
47 to repeat what's already been done and to know about what's  
48 going on, because I often hear in these meetings of things like

1 this hasn't been done or they talk about it and this needs to be  
2 done and in some cases, there are aspects that have been done of  
3 these things.

4  
5 They may still need more information and more detail and so on,  
6 but in some cases there has been research done on these topics  
7 and this is an opportunity to point that out.

8  
9 I guess the next step is finalize what you're doing and send it  
10 to me and if you could get it by three o'clock, no later than  
11 three o'clock, or you could send it right now. Email me what  
12 you've done and Graciela as well. Copy both of us and then I  
13 will take it and put it together for the presentation tomorrow.

14  
15 I really appreciate all the work you guys have done. I think  
16 we've really made progress on this and, Graciela, do you know  
17 what the council's plan is for going forward with this and do we  
18 need to -- What exactly is going to happen after this in order  
19 for this plan to be formulated?

20  
21 **GRACIELA GARCIA-MOLINER:** If you're happy with just having a few  
22 of you meet to do the rest of what needs to be done to the  
23 document to be submitted -- As Miguel said yesterday, it doesn't  
24 have to be by December, but at some point the council has to  
25 tell NOAA that we do have a research plan and pass it along to  
26 the Science Center, et cetera.

27  
28 That's one thing, because the next meeting that you will have  
29 before December has to do with the ACLs, because apparently this  
30 morning all hell broke loose over on the other side regarding  
31 the overages that are already taking place, both in the Virgin  
32 Islands and Puerto and Todd, when he came in and talked about  
33 the red hind, et cetera. That's going to be the main topic for  
34 the next SSC meeting.

35  
36 If you are happy with having two of you meet to finalize the  
37 thing and discuss it at the December meeting and then have  
38 another SSC to finish it, then that's fine. You tell me what  
39 you need to do.

40  
41 **BARBARA KOJIS:** My recommendation would be more than two. There  
42 needs to be somebody from the Southeast Fisheries Science  
43 Center, because they know the status of where things are with a  
44 bunch of these things.

45  
46 **GRACIELA GARCIA-MOLINER:** With the ACLs?

47  
48 **BARBARA KOJIS:** No, for the ACLs, we definitely need a full



1 evaluation of all the information for every species or species  
2 group that has overages. We can't do anything unless we have a  
3 full evaluation of each of those.

4  
5 That's asking for a lot, I know, but that's really required and  
6 it's not just that you've got an overage and now, SSC, go figure  
7 this out.

8  
9 We need to have an evaluation and not just like we were  
10 discussing the red hind. There is information from the red hind  
11 that the spawning aggregation population has been increasing and  
12 increasing and increasing over time, but what other information  
13 is there out there? Is there catch per unit effort information?  
14 What is out there?

15  
16 I think this is also the opportunity to go through and if you're  
17 missing data on stuff or the data isn't there, it's an  
18 opportunity, when we're presenting the information to the  
19 council, for people, fishermen, to realize that, okay, if they  
20 had been putting this data into their catch reports, then we  
21 could have had this information that would have indicated what  
22 the status of the stock was. We need to have a full evaluation  
23 of these and that's for every species or species group that the  
24 SSC needs to consider.

25  
26 To get back to the plan, we have Richard and Reni as the two  
27 people -- Now, they were just the representatives from the SSC  
28 for the plan and there were supposed to be other people meeting,  
29 as far as I understood. Reni and Richard had better speak to  
30 this.

31  
32 **GRACIELA GARCIA-MOLINER:** That has kind of changed and so  
33 between now and December, something has to be more structured.  
34 It doesn't have to be final, but it has to be more formalized.

35  
36 I don't know if there is going to be any changes in having other  
37 people come to a meeting to discuss the research plan for the  
38 council and so that I have to put on hold and let you know.

39  
40 **BARBARA KOJIS:** Certainly there's no socioeconomist and Miguel  
41 would certainly be one that should be on there.

42  
43 **GRACIELA GARCIA-MOLINER:** The ad hoc is just to -- It was to do  
44 basically what you have done here. Remember that that was what  
45 was said in the paragraph that mentioned the ad hoc group.

46  
47 **BARBARA KOJIS:** We have sat here and we've looked at this and  
48 everything else, but these two, and I would think somebody with

1 a socioeconomics background, really needs to think this through  
2 real carefully and fill in all the blanks that we've left out  
3 and figure out --

4

5 **GRACIELA GARCIA-MOLINER:** Miguel could be part of that.

6

7 **MIGUEL DEL POZO:** Regarding that, as a way of a disclaimer, this  
8 is a very preliminary thing and I don't know if a second or  
9 third or fourth draft may look completely different from what  
10 I've got now and probably what all of you have to this point.

11

12 I don't know and I guess this is a question of how we're going  
13 to go and what we're going to do until December, when we need a  
14 more formalized thing. How are we going to work this out? I  
15 need to go over this again at least once more.

16

17 **GRACIELA GARCIA-MOLINER:** You will receive everything from  
18 everyone and just give a brief presentation to the council and  
19 at that time, then we can put what the council wants you to do  
20 in a motion and then you will know exactly what the council  
21 wants from you.

22

23 **BARBARA KOJIS:** The other thing is we need to get comments from  
24 other SSC members on what we've done as well, but then the other  
25 aspect of this is everybody continuing to work on the sections  
26 that they've worked on before and trying to get it fleshed out  
27 and put things together with respect to this and you need a  
28 little break, probably, and then look at it again.

29

30 Maybe we can continue to do this on an email basis as well and  
31 get this -- Send it to me, but then after that, look at it and  
32 fix it up and then we can send it out to all the SSC members,  
33 because there's about four of them, three or four of them, that  
34 weren't here and a couple of them are key for a couple of the  
35 sections. Thank you, everybody, and I am adjourning the meeting  
36 at 1:25.

37

38 (Whereupon, the meeting adjourned at 1:25 p.m. on August 28,  
39 2012.)

40

41

- - -