

TABLE OF CONTENTS

1
2
3 Call to Order and Roll Call.....2
4
5 Discussion of Agenda.....3
6
7 Island-Based Fishery Management: Choosing Species to Be Included
8 for Federal Management Within Each Island Group.....4
9 Review Draft List of Species Selected for Management.....7
10 Puerto Rico.....7
11 St. Croix.....52
12 St. Thomas/St. John.....55
13
14 Presentation of Clustering Analysis.....82
15
16 Next Steps in Developing Island-Based FMPs.....116
17
18 Discussion of ACL Overages.....134
19
20 Review SEDAR-46: U.S. Caribbean Data-Limited Species Workshop
21 Review.....174
22
23 Next Steps in Developing Island Based FMPs (Continued).....243
24 Action 3.....243
25
26 Five-Year CFMC Research Plan.....286
27
28 Adjournment.....296
29

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1 **CARIBBEAN FISHERY MANAGEMENT COUNCIL**
2 **SCIENTIFIC AND STATISTICAL COMMITTEE MEETING**
3 **CFMC Headquarters**
4 **San Juan, Puerto Rico**

5
6 **DECEMBER 8-10, 2015**
7

8 The Scientific and Statistical Committee of the Caribbean
9 Fishery Management Council convened at the CFMC Headquarters,
10 San Juan, Puerto Rico, Tuesday morning, December 8, 2015, and
11 was called to order by Chairman Richard Appeldoorn.

12
13 **CALL TO ORDER AND ROLL CALL**
14

15 **RICHARD APPELDOORN:** Welcome, everybody, to the December meeting
16 of the SSC and the first item is a roll call, a voice roll call.
17 Walter, do you want to start?
18

19 **WALTER KEITHLY:** Walter Keithly, LSU.
20

21 **KEVIN MCCARTHY:** Kevin McCarthy, Southeast Fisheries Science
22 Center, Miami.
23

24 **SHANNON CALAY:** Shannon Calay, Southeast Fisheries Science
25 Center, Miami.
26

27 **JOE KIMMEL:** Joe Kimmel, SSC.
28

29 **JOHN HOENIG:** John Hoenig, Virginia Institute of Marine Science.
30

31 **CHURCHILL GRIMES:** Churchill Grimes, SSC.
32

33 **TODD GEDAMKE:** Todd Gedamke, SSC.
34

35 **BILL ARNOLD:** Bill Arnold, Southeast Regional Office.
36

37 **JORGE GARCIA-SAIS:** Reni Garcia, UPR, SSC.
38

39 **MICHAEL LARKIN:** Mike Larkin, Southeast Regional Office.
40

41 **RICHARD APPELDOORN:** Rich Appeldoorn, SSC Chair.
42

43 **GRACIELA GARCIA-MOLINER:** Graciela Garcia-Moliner, council
44 staff.
45

46 **YASMIN SANCHEZ:** Yasmin Sanchez, Pew Charitable Trusts.
47

48 **KEN STUMP:** Ken Stump with the Ocean Foundation.

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IRIS OLIVERAS: Iris Oliveras, council staff.

GRACIELA GARCIA-MOLINER: Online, we have Helena Antoun, the council DNER liaison, Julie Neer from SEDAR, and Maria Lopez from the Regional Office.

DISCUSSION OF AGENDA

RICHARD APPELDOORN: All right. Supposedly you all have the agenda. It's up on the screen and are we entertaining changes in the agenda? I don't have any.

BILL ARNOLD: I don't have any. Not now.

GRACIELA GARCIA-MOLINER: Do you want to change the ACL overages to -- Do you want to leave it for Thursday morning?

RICHARD APPELDOORN: Bill, how big is that? Is that going to be short? Are there issues? Are you reporting, or are there issues involved that we're going to have to deal with?

BILL ARNOLD: It's up to you. If you guys start asking a lot of questions, it will take longer, but otherwise than that -- But we need to deal with the enhanced reporting component of this. We're going to have a variety of species that did exceed their ACLs in Puerto Rico and in the U.S. Virgin Islands and, as we do every year, we need to determine is it due to enhanced reporting or is it due to an actual overage?

RICHARD APPELDOORN: So we actually have to make a --

BILL ARNOLD: You have to make a decision.

RICHARD APPELDOORN: It should not be the last thing on the --

BILL ARNOLD: Kevin and Shannon, are you guys ready for that?

SHANNON CALAY: Yes, but I'm not on the SSC though.

BILL ARNOLD: No, but the Science Center has to make the determination in conjunction with the SSC.

KEVIN MCCARTHY: What I have is species that were on the form and species that were not on the form and species that are now on the form and so I've got that information, which is -- In those cases, it seems pretty straightforward. They weren't on the form when the ACLs were set and now they are and so that

1 changes the reporting.

2

3 **BILL ARNOLD:** Right.

4

5 **KEVIN MCCARTHY:** Those we can deal with directly. I have that
6 information.

7

8 **GRACIELA GARCIA-MOLINER:** If I may, I think that we should deal
9 with this, because this is going to come up at the council
10 meeting next week. It includes Snapper Unit 2, which is the
11 queen snapper, right at the same time when the silk snapper
12 seasonal closure is in place and it includes the first time
13 closure of spiny lobster for Puerto Rico, which has never
14 happened before. I don't think it should be left for Thursday.

15

16 **BILL ARNOLD:** We can't fail to deal with this. We have to be
17 able to generate the memo to take to the council next week.

18

19 **RICHARD APPELDOORN:** Let's do it right before SEDAR-46. Do we
20 have next steps in developing island-based stuff twice or is
21 there --

22

23 **BILL ARNOLD:** There is two separate actions we have to deal
24 with, but it's only one general topic that it would fall under.

25

26 **RICHARD APPELDOORN:** Right. Why are they split?

27

28 **BILL ARNOLD:** Possibly SEDAR-46 in between them, because we've
29 got -- Action 2 is grouping species and that's what Mike is
30 going to talk about. Action 3 is setting the reference points
31 and that's got everything to do with SEDAR-46.

32

33 **RICHARD APPELDOORN:** All right.

34

35 **GRACIELA GARCIA-MOLINER:** Is there anything else? Okay. Do we
36 want to adopt the agenda?

37

38 **RICHARD APPELDOORN:** All right. Choosing species to be
39 included, is there a briefing someone is going to give?

40

41 **ISLAND-BASED FISHERY MANAGEMENT: CHOOSING SPECIES TO BE INCLUDED**
42 **FOR FEDERAL MANAGEMENT WITHIN EACH ISLAND GROUP**

43

44 **GRACIELA GARCIA-MOLINER:** We can brief you on -- The SSC had
45 recommended to the council the stepwise approach to selection of
46 species and so from the last SSC meeting and that went to the
47 panel of experts and went to the District Advisory Panels.

48

1 **RICHARD APPELDOORN:** It went to the council and there was some
2 merging of opinions between our draft and the DAP and the
3 council meeting formed whatever you were calling that group, the
4 group of experts, who sat down and worked out the list. That
5 was the last point I had to deal with it and then it went on to
6 the DAPs at that point?

7
8 **GRACIELA GARCIA-MOLINER:** It went to the DAPs and then from the
9 DAPs, it went to the council with the separate panel opinion and
10 the DAP opinion.

11
12 **RICHARD APPELDOORN:** Which were more or less the same.

13
14 **GRACIELA GARCIA-MOLINER:** The same, except for a few instances.
15 What happened then was that the council, in most cases, followed
16 the panel of experts' advice in keeping, number one, all of the
17 regulated species in the FMPs for all of the islands and, number
18 two -- They are not the same list of species for the islands and
19 that's what you have in Table 1, a, b, and c, on your updated
20 agenda.

21
22 That forms the basis of everything else that has happened and
23 will happen and so Action 2, in terms of the grouping of the
24 species, comes out of those lists of species that the council
25 had at the last meeting and then, if there are any changes,
26 that's what we should recommend once you hear what Mike has to
27 say about the clustering and the discussion here this morning.

28
29 If the SSC finds that there are certain species that are missing
30 from the list that really should be there, then make that
31 recommendation to the council, but this has gone through a
32 pretty long process of selection of species and the Southeast
33 Fisheries Science Center has also used the basic list of species
34 to deal with SEDAR-46 and to deal with any recommendations that
35 they have regarding the use of the data that's available for the
36 species selection and so that's where we are right now and so
37 these are lists for reference and so, if you want, we can go
38 through them one by one.

39
40 The SSC had established actually the criteria to go through the
41 selection of these species and so the tables actually include
42 the criteria that was used to select the species and the longer
43 document actually divides it up into each list of species
44 divided by each criteria and so this one is just a summary of
45 everything that was selected. Did I make myself clear?

46
47 Anyhow, what you have, the first one is for Puerto Rico and
48 there was one change. What used to be Alternative 3, which was

1 the stepwise selection of species, now became Alternative 2,
2 because it's really the one that the council will be dealing
3 with. Alternative 2, which was we choose a number of criteria
4 and then select the species, that became Alternative 3 in the
5 document.

6
7 **BILL ARNOLD:** The reason for that is it's going to be a lot
8 easier to write it up and analyze the impacts if we order it
9 that way and we have not yet presented that to the council and
10 we will at this meeting ask them to move to change the order of
11 those two.

12
13 **GRACIELA GARCIA-MOLINER:** But that doesn't have any real bearing
14 on this and so do you want to -- Did everyone receive it and
15 they were able to look at the documents that were associated
16 with the agenda? Okay. Do you have any questions regarding the
17 species that we're dealing with? There are sixty-six for Puerto
18 Rico and forty-something for each of the other islands and Mike
19 will go into a bit more detail on that.

20
21 **RICHARD APPELDOORN:** I guess for purposes of SSC review, what
22 this list doesn't have are the species that are no longer on the
23 list.

24
25 **GRACIELA GARCIA-MOLINER:** Exactly.

26
27 **RICHARD APPELDOORN:** I don't know if you have that handy.

28
29 **WALTER KEITHLY:** Can I ask a general question while you're
30 looking at that? You will have to determine an ACL or reference
31 points for each of the species now in the new proposed FMP?

32
33 **RICHARD APPELDOORN:** No, that depends if we have larger
34 groupings.

35
36 **WALTER KEITHLY:** That was my first question, if we do it by
37 large grouping or if it was by individual species. If you have
38 large groupings --

39
40 **RICHARD APPELDOORN:** We can designate a -- What's it called, a
41 reference species?

42
43 **GRACIELA GARCIA-MOLINER:** An indicator species.

44
45 **RICHARD APPELDOORN:** Indicator species, yes.

46
47 **WALTER KEITHLY:** So species that have been added and, as far as
48 I can recall, we did not have mackerels and tunas in any other

1 FMP and so now you will have to develop reference points for a
2 species and is a species like blackfin tuna regional in nature
3 or does it travel all over and is highly migratory?
4

5 **RICHARD APPELDOORN:** Which list are you --
6

7 **REVIEW DRAFT LIST OF SPECIES SELECTED FOR MANAGEMENT**
8 **PUERTO RICO**
9

10 **WALTER KEITHLY:** Puerto Rico, I think, but I don't know that it
11 matters to the question. Yes, it's Puerto Rico. Towards the
12 bottom, we have mackerels and tunas.
13

14 **GRACIELA GARCIA-MOLINER:** We have been in touch with the HMS
15 group and the species that are here, listed under mackerels, are
16 not part of the HMS and they don't have any regulations and
17 they're not really targeted by -- They are not regulated and
18 they are not part of the HMS and so this will be the regional
19 approach.
20

21 It's the same thing with dolphin. I mean you will have to take
22 all those things into consideration, because they all come
23 through the area over a period of time and they are part of the
24 Pan Caribbean stocks and they go off to --
25

26 **WALTER KEITHLY:** As I recall many, many years ago, the South
27 Atlantic Council tried to propose an FMP that included the
28 Caribbean in dolphin and wahoo.
29

30 **RICHARD APPELDOORN:** Yes.
31

32 **WALTER KEITHLY:** Now you want to develop island-based management
33 for these species that we have really no understanding and what
34 happens in the Caribbean may largely depend on what's happening
35 say in the South Atlantic or something.
36

37 **RICHARD APPELDOORN:** Yes, and vice versa. Dolphin was probably
38 the trigger species for some of the smaller tunas and the reason
39 the expert committee recommended these was -- Actually, we
40 didn't recommend it and we -- Well, we did recommend it, but we
41 recommended it with the caveat that it's on the list because the
42 council needs to deal with this issue. Now, whether they want
43 to include the --
44

45 **WALTER KEITHLY:** Why does the council need to deal with this
46 issue?
47

48 **RICHARD APPELDOORN:** Because it's the single-most important

1 species for both the commercial and recreational fisheries and
2 no one else is looking at this and so it's not -- We weren't
3 making a recommendation that you have to have these species
4 under this management plan.

5
6 We were making the point that these species are important, but
7 they're Pan Caribbean and Northwest Atlantic and someone should
8 be making some decisions about who has management authority for
9 these, because they are really important species.

10
11 That was kind of why they're on the list and I wasn't at the DAP
12 meeting and so I don't know what their discussion was. I came
13 to the council and I think they just said okay, but that point
14 was brought up at the meeting, that these are highly migratory
15 throughout the -- Our fish go to the South Atlantic and their
16 fish come here and it's well documented now and so it's just
17 like, what are we going to do about it?

18
19 **WALTER KEITHLY:** I certainly agree with you that they're of
20 commercial importance and recreational importance. I just --
21 Again, maybe we'll get into this in more detail, but it's the
22 first thing that jumped out at me. I mean this has come up at
23 other SSC meetings and I brought the same issue up. Does it do
24 any -- I guess you have to have the objectives for management to
25 begin with. If it's to prevent overfishing, if that's one of
26 your main objectives or --

27
28 **RICHARD APPELDOORN:** The trigger that got it in here was
29 allocation issues between the commercial and recreational.

30
31 **WALTER KEITHLY:** That's pretty much what the South Atlantic did
32 too, as I recall, many, many years ago. We may come back to it.

33
34 **RICHARD APPELDOORN:** Personally, I would like to see it taken
35 over by some larger management entity and whether it's a multi-
36 council thing or it goes to ICCAT or I don't know what, but
37 dolphin is ranging throughout the --

38
39 **WALTER KEITHLY:** I am not saying whether they should or
40 shouldn't be managed. Just because they're important to me does
41 not give a rationale for management, per se. If you cannot --
42 If the majority of the landings are elsewhere and you have very
43 little effect on the stocks and whether or not it's overfished,
44 unless there is an allocation issue, which I imagine there's a
45 lot of discussion about recreational selling their product and
46 commercial fishermen complaining about that, but is there a true
47 -- Does recreational catch affect commercial catch or vice
48 versa, the CPUE?

1
2 **RICHARD APPELDOORN:** Well, does our catch affect the east coast
3 or the Dominican Republic or Cuba or the Bahamas?
4
5 **WALTER KEITHLY:** That would be joint management, which goes back
6 to there was an attempt many, many years ago to have a joint
7 management plan for these species.
8
9 **RICHARD APPELDOORN:** The exploitation on these species since
10 that time has increased immensely and not just here.
11
12 **BILL ARNOLD:** As we presented earlier, in one of the earlier
13 meetings, it's perfectly legitimate to include a species for
14 management to deal with allocation issues.
15
16 **WALTER KEITHLY:** Right and I'm not saying there's not. Again,
17 my question though is is there an allocation problem?
18
19 **RICHARD APPELDOORN:** In Puerto Rico, yes.
20
21 **WALTER KEITHLY:** Okay.
22
23 **GRACIELA GARCIA-MOLINER:** If we take a look at the other ones,
24 check the St. Thomas and the St. Croix table, while I'm looking
25 for the FMUs that Richard requested.
26
27 **RICHARD APPELDOORN:** The other side of this coin is what Walter
28 was saying, what has been added that wasn't there before,
29 because we do have -- At the bottom, you will see the soft/hard
30 corals and things like that have been added and --
31
32 **GRACIELA GARCIA-MOLINER:** Okay. For Puerto Rico, I can go down
33 the list and tell you what has been added and that's what you
34 want to know? The one that has been added for the snappers is
35 cubera snapper. Do you want me to go down the list like that?
36
37 **RICHARD APPELDOORN:** Yes, if you have them.
38
39 **GRACIELA GARCIA-MOLINER:** I can go get my computer, where I have
40 an Excel file that is much better than my memory. For Puerto
41 Rico, cubera snapper is a new species that was added. For the
42 groupers, the yellowmouth grouper.
43
44 For the parrotfish, the one that was deleted from Puerto Rico
45 was the redfin and the new species are the barracuda, the triple
46 tail, the mantas, the eagle rays. Most of the grunts that were
47 part of the FMU were deleted for Puerto Rico and the rainbow
48 runner and was that it? The dolphinfish, both species, and the

1 mackerels and tunas and then cucumbers were specifically added,
2 as were the sea urchins. For the corals, everything in the
3 mesophotic and in the deep. That's for Puerto Rico. Then, as
4 you've noticed, many of the families were deleted.

5

6 **RICHARD APPELDOORN:** Such as?

7

8 **GRACIELA GARCIA-MOLINER:** The goldfish, boxfish, the
9 squirrelfish, the porgies. The squirrelfish, one of them was
10 not deleted and we'll get to that. This is Puerto Rico.

11

12 **RICHARD APPELDOORN:** Let's stay with Puerto Rico for a moment,
13 so we can do this by island.

14

15 **GRACIELA GARCIA-MOLINER:** The specific question for this in
16 Action 2 is whether we're going to look at them on a species-by-
17 species basis and do reference points for each of those species
18 or if we're going to cluster them somehow.

19

20 **RICHARD APPELDOORN:** That's another step. Right now, we're
21 dealing with this, but I can tell you in coming together with
22 this list -- Bill, you were at the meeting and, Reni, were you
23 at that meeting?

24

25 **JORGE GARCIA-SAIS:** Which one?

26

27 **RICHARD APPELDOORN:** Where we came up with the original list?

28

29 **JORGE GARCIA-SAIS:** I think so.

30

31 **RICHARD APPELDOORN:** Speaking for myself, I was I guess somewhat
32 surprised at the desire among the commercial fishermen who were
33 represented from the DAP to have a lot more species than I
34 thought would have been forthcoming from them.

35

36 While in Puerto Rico we did get -- We have a whole number of
37 families that are truly in Puerto Rican waters or the catch
38 rates are just so low that we're never going to be able to deal
39 with them anyway, but they recognized, as did the committee,
40 about a lot of issues about the biology of these species and
41 their use of habitat and really were concerned about them and
42 wanted them included on the list.

43

44 There really wasn't any disagreement in those meetings, and
45 correct me if I'm wrong, about -- We had a couple of species
46 where we had discussions, but that was more about is this really
47 an inshore species or an offshore species and what data do we
48 have to look at it and we all came to a consensus pretty much on

1 that.

2

3 I was pretty happy with what came out of it, but you know in the
4 background was the realization, of course, is that, in terms of
5 setting ACLs, we have way too many species than we could
6 possibly deal with and we are going to -- Assuming a list this
7 large mandates that we are going to have to have FMUs and
8 indicator species to be able to get this down to a manageable
9 list of what's actually going to be assessed.

10

11 **WALTER KEITHLY:** The use of an indicator species, it seems to me
12 we're suggesting some correlation in the landings of a species
13 within that group.

14

15 **RICHARD APPELDOORN:** Either the landings or the life history,
16 yes.

17

18 **WALTER KEITHLY:** It seems to me the ACLs are going to be based
19 on landings, obviously, or at least that's what we've done so
20 far. Has anybody checked yet to see if there is any
21 correlation?

22

23 **RICHARD APPELDOORN:** A number of these species are -- One of the
24 ones that was added, yellowmouth, we really don't have a lot of
25 data on those things, but it's recognized that it's in fact
26 vulnerable and so we may not be actually monitoring that, but if
27 we can monitor some other species that shares its life history,
28 maybe we can be able to group those kinds of things.

29

30 **WALTER KEITHLY:** I'm not so sure it does. If they're two
31 species with similar life histories --

32

33 **RICHARD APPELDOORN:** If they're completely separate, then you're
34 looking at different things, yes. I think it's -- Maybe you
35 guys can deal with complex issues more than I can, but I think
36 we shouldn't be thinking that we have this list of species and
37 we're going to start looking at or cluster them and trying to
38 get numbers down to a reasonable level of assessments and the
39 data that we can do those for and not realize that there are
40 species here that are somehow going to fall through the cracks
41 and either we will have to revisit whether they should be on
42 there or figure out what else could be done, but you know it's
43 hard to look at all of these things and understand fully what's
44 going to be down the road about whether we can actually deal
45 with them or not and so that's my view on that.

46

47 **GRACIELA GARCIA-MOLINER:** You're correct, because if you look at
48 the landings information for Puerto Rico, for example with the

1 groupers, there is landings data by species. The problem is
2 that the ACLs were done for groupers as a whole because there
3 wasn't enough information to manage them or to set an ACL by
4 species and so that was the way that it was originally done.

5
6 You asked me to see what was originally in the list and so from
7 the last SSC meeting and this is the FMU that you have on your
8 screen. It's the original FMUs, the way that they were set up.
9 Snapper Unit 1 has this many species and Unit 2, the queen and
10 the cardinal, et cetera.

11
12 For some islands, some of these have been deleted. Cubera was
13 added and so on and so forth down the list. The goatfish are
14 gone for Puerto Rico and the porgies are gone and the
15 squirrelfish are gone and the tilefish are gone. Most of the
16 jacks are gone. The filefishes are gone and the boxfishes are
17 gone. There has been quite a big change from what the FMUs were
18 to what they are -- To the species that are in the lists now.

19
20 **RICHARD APPELDOORN:** All in all, do you have a rough idea of the
21 percentage this list has been reduced, if you just look at the
22 fishes?

23
24 **GRACIELA GARCIA-MOLINER:** There used to be eighty-nine and now
25 it's sixty-six, but also, one of the things that happened in the
26 list is that there were genus and then "sp" next to it, rather
27 than being named by species. That is a change and so eighty-
28 nine species-specific listed and it's sixty-six now and so
29 that's a change, from eighty-nine to sixty-six.

30
31 **BILL ARNOLD:** Graciela, that's right around sixty, depending
32 upon the island.

33
34 **GRACIELA GARCIA-MOLINER:** Yes and I'm just giving it only for
35 Puerto Rico and without including the aquarium trade or the
36 corals or the -- This is just finfish. In fact, if you look at
37 what has been added versus -- It's greater in the sense of the
38 number of families that have been removed from the list of
39 species that were under management. You have added only two
40 families or three families to the new list.

41
42 **RICHARD APPELDOORN:** Well, specifically, it's four species.
43 Barracuda is more than just the great barracuda?

44
45 **GRACIELA GARCIA-MOLINER:** Yes, it's two species of barracuda and
46 the dolphins and the mackerels and the rays.

47
48 **BILL ARNOLD:** And the holothuroids.

1
2 **RICHARD APPELDOORN:** Yes, but I wasn't counting those.
3
4 **GRACIELA GARCIA-MOLINER:** This is just the finfish. There are a
5 couple of things regarding the changes that have been in place.
6 One is that the Science Center and the panel of experts and the
7 DAPs went through the criteria that had been set forth in terms
8 of how high they were in the total landings and what they
9 represented in terms of the total landings and the vulnerability
10 of the biology of the species and the importance in terms of the
11 economic aspect of things and whether they were bycatch or not.
12
13 One of the problems is that bycatch is reported, but it's
14 reported as dead fish or live fish and that kind of thing and so
15 we don't have too much information on that. All of that pointed
16 to the species that you have on the list.
17
18 **WALTER KEITHLY:** Jumping ahead, I also see that dolphins, for at
19 least St. Thomas, is there an allocation issue there? I am
20 wondering and we don't even have recreational landings, catches,
21 for there and so what is, again, the purpose of --
22
23 **GRACIELA GARCIA-MOLINER:** We don't have the information. The
24 issue in St. Thomas is the one that they do harvest them when
25 they come around and economically they are significant.
26
27 **WALTER KEITHLY:** Again, I guess I can see the argument that yes,
28 they're important and we can't deny that, but the -- It seems
29 the Caribbean Council has a lot of work to do to begin with and
30 if these species are highly migratory and the Caribbean region
31 accounts for a small percent of the catch, you're setting an ACL
32 which may be artificially low and leaves a lot of room for
33 growth in these species without overfishing them and I'm just
34 troubled by that of species with such a highly migratory nature
35 in a very regional FMP or FMPs, I guess it would be.
36
37 **GRACIELA GARCIA-MOLINER:** In terms of Puerto Rico, the fishing
38 regulations here do have a cap on the number of dolphin that
39 recreational fishers can harvest, by boat and by person. That
40 is being carried on to the new regulations that are being
41 drafted now, but those are the only regulations that they have
42 in place and that's really an allocation. That's to cap the
43 recreational harvest.
44
45 **WALTER KEITHLY:** In other words, the territory has already
46 handled it.
47
48 **GRACIELA GARCIA-MOLINER:** Yes, but because of the issue of

1 compatibility and because I'm harvesting it in the EEZ, but I am
2 landing it on the state side of things, people are concerned and
3 they wanted to see federal management of the species.

4
5 **WALTER KEITHLY:** So you think there may be some compatibility
6 between the federal regulations and the commonwealth
7 regulations.

8
9 **GRACIELA GARCIA-MOLINER:** That's what people are hoping for.
10 I'm just telling you what the discussion was at the DAP meeting,
11 for example, or other meetings of the council. That's basically
12 an economic impact, because even if the law says that
13 recreational cannot sell their harvest, they still would like to
14 see compatibility with the federal waters and they're hoping
15 that that would have an impact on the number of dolphin that
16 will be landed by the recreational fishers and therefore, the
17 number of fish that they would be able to sell.

18
19 The issue in the Virgin Islands is it's different. For selling
20 fish, you have to have a business license and I think that one
21 of their concerns is that the charter operators, as time goes
22 by, will have business licenses and they will sell their catch
23 when they go out chartering and so unfair competition for the
24 commercial fishers.

25
26 **WALTER KEITHLY:** Okay and so the commonwealth regulation is a
27 landing restriction on the recreational fishery.

28
29 **GRACIELA GARCIA-MOLINER:** It's a bag limit for the recreational
30 fishery.

31
32 **WALTER KEITHLY:** It doesn't matter if it's caught in federal
33 waters or territorial waters, but it's strictly a landing.

34
35 **GRACIELA GARCIA-MOLINER:** It doesn't specify where it was
36 caught, but it applies within the state jurisdiction.

37
38 **WALTER KEITHLY:** If it's strictly a landing, it's an enforcement
39 regulation and so you have to develop reference points for these
40 species nonetheless, which, again, may have little relationship
41 to what could potentially be caught without having any impact on
42 the species.

43
44 **GRACIELA GARCIA-MOLINER:** But in terms of the landings, they are
45 significant for both the commercial and the --

46
47 **WALTER KEITHLY:** I know they are. I don't doubt that. I am
48 just questioning whether high landings by itself, or even high

1 economic importance, justifies species being included in FMPs.

2
3 **RICHARD APPELDOORN:** Again, I think our thinking was that we
4 wanted the council to take notice of the fact that basically
5 nobody is managing them on a stock-wide basis, which is
6 multijurisdictional. There isn't any kind of
7 multijurisdictional agency that's out there and so I am not -- I
8 am agreeing with you in the sense that, you know, is this the
9 best place to do it and probably not.

10
11 The reason for initially sticking it on the list is to maybe
12 have the council think about maybe we join at least with the
13 South Atlantic and have a more regional focus on the species and
14 this council certainly is capable of making a recommendation or
15 the committee could make a recommendation to the council that
16 that's really the way they should go, if you think that's more
17 appropriate, other than to have a situation where we're going to
18 do assessments.

19
20 Of course, we can do an assessment that sets the ACL really high
21 and that we think that it's actually not being overfished and
22 therefore it can be up there. That's the other way of
23 approaching it, but when you have a species this important to
24 the region, shouldn't the region be looking at it and the
25 council should answer that question for themselves. You know,
26 do we want it here or do we want it someplace else, but not to
27 pretend that it's just not an issue.

28
29 **CHURCHILL GRIMES:** Rich, is there any stock structure kind of
30 studies on the relationship between these Caribbean pelagics and
31 the South Atlantic ones, with microchemistry and the like? I
32 mean there's a lot in between the Gulf and the South Atlantic
33 that's showing how distinct they are and the mixing rates and so
34 on.

35
36 **RICHARD APPELDOORN:** Are we talking about dolphin or are we
37 talking about other stuff?

38
39 **CHURCHILL GRIMES:** Mackerels or dolphin or any of those things,
40 the pelagics you're talking about.

41
42 **RICHARD APPELDOORN:** The studies that have been done have shown
43 that there is plenty of basis for separating the Lesser Antilles
44 from the rest of the northwestern dolphinfish, not including the
45 Gulf.

46
47 There were tagging studies that clearly show these fish are
48 going all the way around and so in terms of the Greater Antilles

1 and the U.S. east coast and the Bahamas and Bermuda, we're all
2 fishing the same stock. The Gulf, I don't know about. It
3 wasn't in the tagging work that's been done and I think there's
4 a southern Caribbean group there that's probably separate as
5 well.

6
7 For the other species that were adding that were moving around a
8 bit, wahoo probably has similar, but maybe not exact, kinds of
9 things and some of the other mackerels seem to be more coastal
10 and I don't know about it all. It's not my area.

11
12 **WALTER KEITHLY:** Graciela may have the answer, but why did the
13 Caribbean Council -- What happened to make the council back out
14 of the joint FMP? Do you remember?

15
16 **GRACIELA GARCIA-MOLINER:** We had joined forces with the South
17 Atlantic and the Gulf of Mexico and the Caribbean and both the
18 Gulf and the Caribbean pulled out of that and one of the main
19 reasons for the Caribbean Council not being with dolphinfish was
20 one of allocation and so the council members at the time,
21 because it was an issue of recreational and commercial
22 allocations, were not -- They couldn't see that that would
23 really move forward.

24
25 **WALTER KEITHLY:** The South Atlantic was -- The FMP for the South
26 Atlantic was -- They tried to disguise it, but it was based on
27 allocation too, the rationale.

28
29 **GRACIELA GARCIA-MOLINER:** At the time, the pull for not
30 restricting recreational catches was one of the main -- We went
31 through the whole process of incorporating everything, essential
32 fish habitat definitions and beginning to deal with the
33 reference points, at that time, looking at the commercial and
34 recreational catches. That was in 2005 or thereabouts, or even
35 before then. I mean that's in the archives, but the mackerels
36 were back in 1987 or something like that.

37
38 **WALTER KEITHLY:** Was that a --

39
40 **GRACIELA GARCIA-MOLINER:** That was a draft FMP for coastal
41 pelagics in 1987.

42
43 **WALTER KEITHLY:** That was before my time.

44
45 **GRACIELA GARCIA-MOLINER:** Mine too. At that time, there was
46 really no dealing with anything that was beyond the borders of
47 the U.S. Caribbean or, for that matter, the U.S.

48

1 **RICHARD APPELDOORN:** Walter, do you want to make a
2 recommendation on --
3
4 **WALTER KEITHLY:** I will. I don't think it's going to go
5 anywhere, but I would recommend that we propose in the Puerto
6 Rico FMP that the dolphinfish and the mackerels and tunas be
7 taken out of the list of species to be included in the FMP.
8
9 **RICHARD APPELDOORN:** All right. That's all well and good, but
10 your rationale is what people are wanting to hear.
11
12 **BILL ARNOLD:** Is this for all the islands or just for Puerto
13 Rico?
14
15 **WALTER KEITHLY:** It would be for all the islands, yes. I
16 thought we were just discussing Puerto Rico though, for the time
17 being.
18
19 **RICHARD APPELDOORN:** Let's just discuss Puerto Rico for the time
20 being, but obviously when we come to the other ones we can just
21 --
22
23 **WALTER KEITHLY:** I think the rationale is twofold. First, I
24 think that, at least in the short run, the council is going to
25 have enough species on their plate to have to determine
26 reference points, but even more so, and I don't have the numbers
27 in front of me, but the Caribbean catch of these species, or
28 average of these species, are very small in relation to the
29 total.
30
31 It's a highly migratory species and the Caribbean region has
32 very little impact on the total catch of that and so, therefore,
33 the possibility of overfishing the species is not going to be
34 related to what happens down here by the Caribbean.
35
36 Finally, I may just add a third reason. At least for Puerto
37 Rico, it sounds as if the commonwealth already has a plan or a
38 regulation in place for managing the recreational fishery and
39 it's based on landings and regardless of where it's being caught
40 and so they can have it adequately limit the recreational catch.
41
42 **JORGE GARCIA-SAIS:** I have a question about this. When those
43 regulations, the state regulations, of dolphinfish in
44 particular, and I am not sure if the initiative was for all
45 highly migratory species or mostly for dolphin, but I recall
46 dolphin and there was some regulations for the recreational
47 fisheries.
48

1 Was the council involved in these regulations for mahi-mahi
2 fishing and landings for recreational in Puerto Rico? I mean it
3 jumps into my mind that what Walter is saying is true and that
4 the fisheries of dolphinfish in Puerto Rico represent a very
5 small percentage of what is the fisheries of these species in
6 the Caribbean and perhaps in the western Atlantic and whatever,
7 but then what was the rationale for having restricted landings
8 in Puerto Rico if it's such a small percentage of the total?

9
10 **GRACIELA GARCIA-MOLINER:** It's not a small percentage of the
11 total in Puerto Rico. Here, it's a very significant part of the
12 harvest, of the catch, and the issue really with the DNER was
13 one of allocation.

14
15 The council participated in the moving towards the development
16 of the regulation, per se, and before it was as it is now and so
17 it has representation from the council, but the regulation comes
18 from whatever was presented at the meetings for the DNER and
19 that one had everything to do with restricting the number of
20 fish that the recreational fishers were harvesting and therefore
21 bringing to land and therefore selling.

22
23 **JORGE GARCIA-SAIS:** Okay, but the thing is, does it make sense?
24 I mean is the fishing effort in Puerto Rico affecting in any way
25 the health of the stock? Because if it is not, then why would
26 the restrictions be in place?

27
28 **GRACIELA GARCIA-MOLINER:** It doesn't have anything to do with
29 the biology or the stock. It has to do with the fact that
30 recreational fishers were landing hundreds of dolphinfish and
31 they didn't like it and DNER wanted to -- Even with stating in
32 the regulation that no recreational fisher is supposed to sell
33 their catch, they put a bag limit on the recreational fishers to
34 limit the amount of fish that they could bring to shore. That
35 was it.

36
37 **RICHARD APPELDOORN:** To give you an idea of the magnitude, even
38 with this limit, which I think is twenty fish?

39
40 **GRACIELA GARCIA-MOLINER:** Thirty. Thirty total per boat and ten
41 per fisher.

42
43 **RICHARD APPELDOORN:** The recreational landings are about three
44 times, I think that's about right, the commercial landings and
45 so if you open it up -- Even if they took that limit and opened
46 it up to the market, and I'm sure they're going in there anyway,
47 but it really would be an impact on the commercial fishery.

48

1 **JORGE GARCIA-SAIS:** Okay, but the commercial fisherman doesn't
2 have any restrictions and they can take as much as they want?

3

4 **RICHARD APPELDOORN:** Yes.

5

6 **GRACIELA GARCIA-MOLINER:** Exactly.

7

8 **RICHARD APPELDOORN:** So Walter has a recommendation. I would
9 like to raise two questions or two points with that. One will
10 be to Walter and one would be to the group at large. This was a
11 discussion that we had at the time we were discussing this in
12 the committee of experts and one is for -- Certainly for dolphin
13 what we've been discussing is certainly the case and probably
14 for wahoo, but there wasn't a lot of information available on
15 the other mackerels and they don't seem to be as -- They do seem
16 to be really coastal and the extent of their migrations are
17 really unknown and so one question is should they be lumped into
18 this concern about what we're doing with dolphinfish?

19

20 The second part, and this is more to Walter, but can be kind of
21 to the group, is would there be a follow-up recommendation to
22 the council that if we take these things out of here that the
23 council should engage in discussion with at least the other
24 councils about a more regional approach?

25

26 Because if we're saying our catch is so small we're not
27 affecting it really, can we say that about what the South
28 Atlantic is doing, because their catch is potentially going to
29 affect us, or Cuba for that matter or the Dominican Republic or
30 any of the other places that are hitting all the same fish?

31

32 **WALTER KEITHLY:** I expect the second question was addressed to
33 me and I don't really have an answer. I would like to see why
34 the Caribbean Council and the Gulf Council backed out of the
35 joint FMP originally and there may have been a very strong
36 rationale for backing out of it. I remember the discussion in
37 the Gulf quite a bit and the argument was not being overfished -
38 - It wasn't much of a rationale, but they saw no need for
39 management.

40

41 **RICHARD APPELDOORN:** Bill, is there a mechanism to have a species
42 on for data collection purposes, where they are not doing
43 assessments?

44

45 **BILL ARNOLD:** We have already got them on data collection. If
46 they are reported, we keep the data. If they're not reported,
47 we don't. If you want to add them to a reporting form, you've
48 got to get with the local governments on that, because they run

1 the reporting.
2
3 **GRACIELA GARCIA-MOLINER:** For the forms, they have been on --
4
5 **BILL ARNOLD:** As far as I know they're being reported.
6
7 **GRACIELA GARCIA-MOLINER:** It's generic dolphinfish and so it
8 doesn't specify the species. The species comes from the
9 statistical sampling.
10
11 **BILL ARNOLD:** They end up on data collection pretty much by
12 default, Richard. If we're not managing them, but we're getting
13 data on them, they are data collection only species.
14
15 **RICHARD APPELDOORN:** All right, but, as you said, that's default
16 and defaults can change.
17
18 **BILL ARNOLD:** Sure. Looking at the flip side of that, we're not
19 going to ignore the data that's in the database.
20
21 **RICHARD APPELDOORN:** No, but can we mandate that the data need
22 to be collected?
23
24 **BILL ARNOLD:** We can't mandate that. Correct me if I'm wrong,
25 but we can't tell the local governments what to --
26
27 **RICHARD APPELDOORN:** Is that true for any of the species?
28
29 **BILL ARNOLD:** Yes and I mean we had this fight with St. Thomas
30 and lost. I just wanted clarification, Richard, and you say
31 lumping mackerels and do you mean lumping mackerels and tunas or
32 just the mackerels, because we're getting these tunas kind of
33 lost in this discussion.
34
35 **RICHARD APPELDOORN:** There's one species of tuna, right?
36 Blackfin?
37
38 **KEVIN MCCARTHY:** Little tunny.
39
40 **BILL ARNOLD:** But Walter included those when he said --
41
42 **RICHARD APPELDOORN:** I know and I'm saying that king mackerel
43 and cero are probably not as wide-ranging and we really don't
44 know what they do and by wide-ranging, I have no idea what that
45 means. They could just move out to -- We know there is some
46 seasonality to their catch and that's kind of what we know and
47 we don't know whether they move offshore or they move someplace
48 else. I don't think anyone has shown a pattern of them showing

1 up seasonally in the Virgin Islands and then Puerto Rico and
2 then the Dominican Republic or anything like that and so we
3 don't know what they do and to assume that they're as widely
4 moving as the other species --

5
6 **CHURCHILL GRIMES:** Someone asked about what biological
7 information there was about the relationships between the stocks
8 in different areas and you were really talking about dolphin?

9
10 **RICHARD APPELDOORN:** Yes, dolphin.

11
12 **GRACIELA GARCIA-MOLINER:** There was at some point some work on
13 king or cero, back in the 1990s or something like that, tagging
14 fish to try to determine if they move from island to island. I
15 don't recall the results, but I wrote myself a note to look at
16 it.

17
18 **JOE KIMMEL:** I am pretty familiar with what king mackerel -- I
19 don't think there has ever been much work that established what
20 the relationship between what's down here in the Caribbean and
21 what's in the Gulf of Mexico and South Atlantic.

22
23 As far as one of the councils, whichever it was, deciding that
24 they really didn't want to broach the subject of having a joint
25 management with the Caribbean, they didn't even want to deal
26 with that issue between the South Atlantic and the Gulf of
27 Mexico for many years, when in fact there was lots of
28 information that showed that in fact there's a huge amount of
29 mixing between the two and the way they had the mixing zones and
30 the stock structure set up was not really right and this was
31 mainly on account of the fact that they never bumped up against
32 the catch limits and so they were not anxious to cause
33 difficulty, given that they weren't having to restrict fishermen
34 really in either place, particularly in the South Atlantic.

35
36 When that finally changed, here in recent years, now they do
37 want to do that and the stock assessment is structured so that
38 what the mixing zones are currently estimated to be, percentages
39 and so forth.

40
41 **GRACIELA GARCIA-MOLINER:** There is no ACLs for the dolphins, the
42 tunas, or the mackerels that are on the list right now. They
43 are brand new species brought into and basically what they are
44 in terms of their landings and how important they were in terms
45 of their economic value and whether they were crossing the state
46 EEZ boundary and so that information was taken into
47 consideration to put it on the list. Now the next step will be
48 to develop the reference points and the annual catch limits, if

1 the council is going to do this.

2

3 **JOE KIMMEL:** I was going to say I would support Richard's second
4 point or caveat or whatever that just because the harvest here
5 is not sufficient as to impact the status of stocks in the South
6 Atlantic and the Gulf of Mexico, it's a two-way street and so
7 they do have to be actively managed in the Gulf and South
8 Atlantic and so the question is are they impacting the status of
9 the stocks in the Caribbean? That's a legitimate question.

10

11 **JORGE GARCIA-SAIS:** As well as what are they doing here when
12 they come by, because, for example, in terms of mackerel, I know
13 that they reproduce around here. During the peak season when
14 they are being fished, a lot of larvae show up in the water and
15 so there is a relationship. There is some biological meaning of
16 them being here at that time.

17

18 **RICHARD APPELDOORN:** Which species are you talking about?

19

20 **JORGE GARCIA-SAIS:** Scombridae.

21

22 **CHURCHILL GRIMES:** How long do the king mackerel live?

23

24 **JOE KIMMEL:** They are long-lived. That's a lot different than
25 dolphinfish and so I don't know if lumping these things together
26 is really biologically the right thing to do anyway. I mean
27 dolphinfish, they are very abundant and they're caught
28 everywhere, but their life span is very short, relatively.

29

30 **RICHARD APPELDOORN:** Right and they reproduce a lot.

31

32 **JOE KIMMEL:** The scombrids. I don't know if I agree with
33 Walter's suggestion to lump them altogether. I think he's got a
34 point for coryphaenids, but I am not sure about the scombrids.

35

36 **RICHARD APPELDOORN:** With Walter's permission, can we separate
37 discussion of dolphin from the other species? Let's just look
38 at the discussion of dolphinfish for the moment. Do we want to
39 recommend them not to be included on this list, for the reasons
40 set forth by Walter?

41

42 I would add with an alternative that if we take them off the
43 list that I would recommend that we recommend to the council
44 that they look into reentering into discussions of joint
45 management plans with the other councils.

46

47 **KEVIN MCCARTHY:** Just as a point of interest, in the South
48 Atlantic -- I don't know about in the Gulf, but in the South

1 Atlantic, dolphin were closed to fishing, commercial fishing
2 anyway, at the end of June. They had half a year and then they
3 were closed and so there have been management actions.

4
5 **GRACIELA GARCIA-MOLINER:** Here, the council is going to look at
6 the allocation issue. I mean that's the main concern that the
7 council has that they have been hearing from testimony at
8 meetings over and over again, the fact of the allocation issue.
9 The goal is to deal with it, in order to complement the state
10 government. That is going to be really --

11
12 **RICHARD APPELDOORN:** The council would be basically issuing a
13 compatible regulation with the state --

14
15 **GRACIELA GARCIA-MOLINER:** I believe, of some sort. I mean
16 that's a possibility and that's something that has been on the
17 table since the early 2000s, when the joint FMP was being
18 developed.

19
20 **BILL ARNOLD:** Graciela, refresh my memory. We went through --
21 We brought these lists to the SSC and they reviewed them
22 previously, right?

23
24 **GRACIELA GARCIA-MOLINER:** No, the SSC, what they did is they set
25 up the criteria. I am going to quote you. This is supposed to
26 be an objective criteria setting --

27
28 **JORGE GARCIA-SAIS:** I do remember that. We went through the
29 list and --

30
31 **GRACIELA GARCIA-MOLINER:** What the SSC looked at originally was
32 the criterion and these are the criterion and you had already
33 looked at some species that would make it in out of the list and
34 then that went to the council and went to the panel of experts
35 and went to the DAPs and went back to the council and now this
36 is what the council, from the discussion of the panel of experts
37 and the DAP, based on the criteria that the SSC set, following a
38 step-wise approach, objectively, and forget about anything else
39 except what's in there. It's regulated, it's in the EEZ, it's
40 in the 90 percentile or it's vulnerable or whatever. They made
41 it into the list.

42
43 The discussion here, although you can make a recommendation to
44 the council that because there is no thinking that it's going to
45 be overfished, but we just heard Kevin tell you that the South
46 Atlantic has closed for six months.

47
48 **RICHARD APPELDOORN:** No, the Gulf.

1
2 **GRACIELA GARCIA-MOLINER:** No, the South Atlantic.
3
4 **KEVIN MCCARTHY:** The South Atlantic.
5
6 **WALTER KEITHLY:** The Caribbean was overfished and they based an
7 ACL on whatever --
8
9 **JORGE GARCIA-SAIS:** Which one?
10
11 **GRACIELA GARCIA-MOLINER:** No, it's not overfished, but it's that
12 the ACL was exceeded and so they had to close for six months.
13
14 **KEVIN MCCARTHY:** There was a quota and they exceeded it or they
15 were about to exceed it and so they were closed. I just emailed
16 the guy who is involved in this and I asked about
17 commercial/recreational for the Gulf and any closures.
18 Hopefully he will get back to me, just as a matter of interest.
19
20 **GRACIELA GARCIA-MOLINER:** So, again, the other thing that -- I
21 mean we're talking about Action 1 and it's just these are the
22 species that made it into the list. Second, we have to talk
23 about how we're going to cluster them. Third, we have to decide
24 if they are going to be managed, they have to have reference
25 points and so we have to do that. We have to set it up in such
26 a way that there will be an ACL set up by the council.
27
28 The council then will decide if the recommendation or the
29 regulation is going to be for the recreational or if it's going
30 to be additional regulations for the commercial and the
31 recreational or what it's going to do regarding restricting the
32 harvest so that it will not surpass the ACL recommendation.
33
34 **MIKE LARKIN:** They were predicted to hit the ACL in this year
35 and they never actually hit it. So far, they are at 94 percent
36 of the ACL and they did close on June 30 and so, anyway, based
37 on what we saw, they were predicted.
38
39 **GRACIELA GARCIA-MOLINER:** What's the ACL for -- This is one
40 species or two species?
41
42 **MIKE LARKIN:** You mean are all the dolphins included? I don't
43 think it is.
44
45 **JOE KIMMEL:** I don't think so.
46
47 **GRACIELA GARCIA-MOLINER:** What's the ACL for the South Atlantic?
48

1 **KEVIN MCCARTHY:** 1.15 million.
2
3 **GRACIELA GARCIA-MOLINER:** And the landings for the recreational
4 are around 500,000?
5
6 **KEVIN MCCARTHY:** I don't know. I can look it up. I don't know
7 if that was a commercial only closure.
8
9 **MIKE LARKIN:** It was commercial only, yes. It's fourteen-
10 million for the recreational in the South Atlantic and they're
11 at 39 percent of their ACL.
12
13 **GRACIELA GARCIA-MOLINER:** Fourteen million?
14
15 **JOE KIMMEL:** If you look at the FMP, their real point was to
16 change the allocation between the traditional recreational
17 harvest and the current commercial harvest and so that was their
18 criteria. They said keep the relationship between the
19 commercial and recreational the same and so the recreational
20 fishery is pretty much protected, because they have a very high
21 ACL.
22
23 **BILL ARNOLD:** This is just something to think about. If the SSC
24 is going to make a recommendation that a species be removed,
25 your rationale for that recommendation might best carry the day
26 if you base it on the criterion that got this thing into the
27 list in the first place, because if you provide other rationale,
28 that's not going to remove the fact that that criterion was met
29 by this species and it would still need to be included, whatever
30 other rationale there may be. If you don't go after that
31 rationale, that criterion, then you really haven't accomplished
32 anything.
33
34 **RICHARD APPELDOORN:** It's been a while since we've last --
35
36 **GRACIELA GARCIA-MOLINER:** The remainder of species include those
37 species of economic importance to the nation or the regional
38 economy based on a threshold of landings or values separately
39 determined for each of the recreational and commercial sectors.
40 90 percent is what we did and those represent the --
41
42 **BILL ARNOLD:** Dolphin ranks like one or two on that list and so
43 you're going to have a tough time getting them out unless you
44 can argue that they don't rank in the top ten, based on the
45 SSC's criteria.
46
47 **WALTER KEITHLY:** I gave a recommendation and I gave a rationale
48 and I am finished.

1
2 **JORGE GARCIA-SAIS:** One comment. I think that it's important to
3 mention that the local government regulations apply to waters
4 that are EEZ and so --

5
6 **WALTER KEITHLY:** I would comment that from what I gather it's a
7 landings regulation and so it does not matter where the dolphin
8 is being caught, whether it's in the EEZ or the commonwealth
9 waters.

10
11 **JORGE GARCIA-SAIS:** I believe it's the responsibility of the
12 council to manage the species and so in that regard, I believe
13 that your recommendation makes sense.

14
15 **RICHARD APPELDOORN:** Well, I reiterate my point. All these
16 things are thought to move around a whole lot, but dolphinfish
17 was the driving species of that. The reason for pushing for
18 them to be on there was because of somebody should be looking at
19 this and not because this is the proper place to do it, but if
20 we don't make the recommendation that they should be addressed,
21 then who is?

22
23 **GRACIELA GARCIA-MOLINER:** There is also another consideration
24 and that is that you're creating an island-based FMP and so this
25 island-based FMP is looking at the way that fisheries are
26 carried out in each of the islands and so these are fisheries
27 that have been part of the mainstream for a long time for which
28 there hasn't been any management until recently with the
29 dolphinfish in the commonwealth.

30
31 Now, what's the relationship between these migratory species and
32 the other local fishers in terms of reducing the effort that is
33 put into certain species when the migratory comes around and the
34 relationship between the species that are being harvested and
35 the baitfish that are being used for these species and so there
36 is a little bit more to only having the species in the list.
37 That is also what the council was looking at, in terms of how
38 these fisheries vary throughout the year and in the many years
39 that they've been prosecuted from island to island. We have the
40 recommendation on the screen and can everyone see it? Walter,
41 do you want to fix the language?

42
43 **JOE KIMMEL:** It's too bad that those Puerto Rican fisherman can
44 only land thirty fish.

45
46 **GRACIELA GARCIA-MOLINER:** It's always been more of a
47 recreational catch. It's just recently that it's becoming more
48 of a commercial catch. One, because limitation of other species

1 and two, because of the demand that's being developed. In St.
2 Thomas, for example, the dolphin has always been part of what
3 they sell to the restaurants.

4
5 **JORGE GARCIA-SAIS:** That's good. That's a very good reason,
6 because if you close everything else, they see the dolphin and
7 that's what they -- They have increased the effort on
8 dolphinfish because of the closures particularly of snappers and
9 the disappearance of groupers, to start with, and then the
10 closures of the red hind and the closures of the mutton snapper.

11
12 That has really motivated fishermen to go after dolphinfish and
13 now they are mixing it pretty well with the deepwater snappers.
14 They go for deepwater snappers and they see the schools of
15 dolphinfish and they go for the dolphin and go back to the deep-
16 sea fishing.

17
18 **GRACIELA GARCIA-MOLINER:** I have a question. The South
19 Atlantic, how many pounds have they landed in the recreational
20 harvest? Are they close to the fourteen-million pounds?

21
22 **MIKE LARKIN:** No, that was a commercial closure.

23
24 **GRACIELA GARCIA-MOLINER:** No, but in terms of the fourteen-
25 million pounds?

26
27 **MIKE LARKIN:** They've landed about 40 percent of it and so
28 they're only at like five-million so far of the fourteen-million
29 and so they're not close to closing the recreational.

30
31 **WALTER KEITHLY:** There's a tremendous amount of variation from
32 one year to the next, at least in the Gulf, in dolphin landings.
33 I imagine it's the same in the South Atlantic.

34
35 **MIKE LARKIN:** Right and remember too that those landings
36 estimates are coming from MRIP and so it's a survey and so
37 sometimes you can get some really funny numbers, depending upon
38 who gets interviewed and who doesn't. It can bounce around a
39 fair bit.

40
41 **WALTER KEITHLY:** You say there is uncertainty in those
42 recreational statistics?

43
44 **KEVIN MCCARTHY:** There might be a little uncertainty and I think
45 they're the first to admit it. Now, I suspect for something
46 like dolphin, it's probably pretty good, compared to a more
47 rarely caught species, but there is still going to be
48 variability inherent in the survey over and above what may be

1 going on with the population.

2

3 **MIKE LARKIN:** For the last four years, it looks like it's been
4 35 to 40 percent of the ACL. It's within that range every
5 single year for the recreational sector. There is some
6 variability, like you're saying, Kevin, but it's never been
7 close to the fourteen million, if that helps.

8

9 **JORGE GARCIA-SAIS:** Where is that?

10

11 **MIKE LARKIN:** The South Atlantic recreational ACL for dolphin.

12

13 **GRACIELA GARCIA-MOLINER:** You're looking at the last few years,
14 right?

15

16 **MIKE LARKIN:** Yes.

17

18 **RICHARD APPELDOORN:** All right. Here is my suggestion. It's
19 that we actually wait on the decision of this, because this
20 really is a decision we're going to make across all island
21 groups. I would like to know whether besides -- You say that's
22 a red flag that's going to show up, but is there anything that's
23 showing up that people have an issue with, either that's been
24 not included or taken out or ought to be included that wasn't
25 included?

26

27 I have two questions, because I thought we were talking -- I
28 just noticed this and I apologize for that, but like margate
29 would have been on that list for the grunts, because of their
30 biology. They used to be important.

31

32 **TODD GEDAMKE:** Do we have just a list of the ones that were
33 added and the ones that were taken away? I know you listed them
34 off, but there is twenty-three species you said that were
35 removed.

36

37 **RICHARD APPELDOORN:** Most of those come out of all the
38 tilefishes, all the goatfishes, all the boxfishes, all the
39 squirrelfishes, and all the porgies and most of the grunts.

40

41 **GRACIELA GARCIA-MOLINER:** I do have a file that has that. I have
42 to go look for it on the other computer, but I have one that
43 lists all the new species and the -- This one, what it does,
44 this one compares Puerto Rico to St. Croix to St. Thomas in
45 terms of the list of species that were in the original FMUs and
46 where they -- Is this what you wanted to see? Wherever it says
47 "no", those have been taken out of that list, but this includes
48 everything, all the old ones and all the new ones. I can send

1 this one around if you want me to in PDF.
2
3 **RICHARD APPELDOORN:** How do you distinguish what's been added?
4
5 **GRACIELA GARCIA-MOLINER:** It says "new".
6
7 **RICHARD APPELDOORN:** Then all the red "no" are things that were
8 taken out.
9
10 **GRACIELA GARCIA-MOLINER:** That one has everything, all the new
11 and all the --
12
13 **BILL ARNOLD:** Graciela, will you go back down to the rays? All
14 of those are new, right?
15
16 **RICHARD APPELDOORN:** No, they've all been taken out on the other
17 islands.
18
19 **GRACIELA GARCIA-MOLINER:** Yes and I forgot to put "new" there.
20 We never had them anywhere.
21
22 **BILL ARNOLD:** Tripletail is new.
23
24 **GRACIELA GARCIA-MOLINER:** Everything from here down is new in
25 the finfish. I will complete this one for new.
26
27 **JORGE GARCIA-SAIS:** What about the ballyhoo? I remember
28 something about that.
29
30 **GRACIELA GARCIA-MOLINER:** Those are not part of these finfish.
31
32 **RICHARD APPELDOORN:** They were taken out because they were all
33 inshore.
34
35 **GRACIELA GARCIA-MOLINER:** One of your first criterion was the --
36
37 **RICHARD APPELDOORN:** Right and I will throw this out there. If
38 you look at the catch of baitfish, it parallels exactly that of
39 dolphinfish and so you're seeing it the way dolphinfish goes up,
40 at least in terms of percentage of the commercial catch. We
41 don't have statistics for the recreational. The baitfish does
42 exactly the same thing at the exact same time.
43
44 Although baitfish and the baitfish fishery is entirely within
45 the EEZ, it's feeding the pelagic fishery and so the pelagic
46 fishery does in fact have an impact on the inshore species.
47
48 **JORGE GARCIA-SAIS:** Let me add to that a little something. I

1 mean where I admit that for probably 80 percent of the habitat
2 is inshore, out of the EEZ, there is a percentage of the habitat
3 that is included for those baitfish in the EEZ.

4
5 I see ballyhoo all the time at the shelf edge off of Tourmaline
6 and Abrir la Sierra and likewise even at Bajo de Sico. I am not
7 -- I remember that I brought this up at one SSC meeting and I am
8 not sure it was for during the original list, but there is a big
9 harvest and I'm not sure if we should actually take it off our
10 list. They are on now and my comment is I'm not sure why we
11 decided to take it out. I can't remember why.

12
13 **RICHARD APPELDOORN:** We didn't take it out. They were never in.

14
15 **GRACIELA GARCIA-MOLINER:** There is a baitfish list that has also
16 been looked at and one of the things is later on there is going
17 to be an action regarding the ecosystem component species and
18 that type of thing and so that list is still there, but it's not
19 under federal management. These are the ones that the council
20 can do something about.

21
22 **JORGE GARCIA-SAIS:** Maybe it was for that island-based
23 management or whatever that the discussion took place.

24
25 **GRACIELA GARCIA-MOLINER:** There is going to be discussion in the
26 FMP about the forage species and whether they are used as bait
27 or they are just available for these species to feed on under
28 not all circumstances, but that will not require that we set an
29 ACL for baitfish.

30
31 **RICHARD APPELDOORN:** If the species are primarily inshore, or in
32 the EEZ anyway, and we're talking about fish, particularly
33 dolphinfish, which they may be coastal pelagics, but not that
34 close to the coast, is there really much interaction?

35
36 **GRACIELA GARCIA-MOLINER:** With the baitfish?

37
38 **RICHARD APPELDOORN:** This is what they're using for bait, but is
39 this what the fish are actually eating normally?

40
41 **GRACIELA GARCIA-MOLINER:** We had requested some information from
42 the fisheries research lab and they sent information to the
43 council regarding finding many otoliths, fish otoliths, in the
44 stomach of dolphinfish. He was tracking down the list to see if
45 he could determine what species they were actually eating,
46 because by the time they get them, they are mostly digested.

47
48 **JOE KIMMEL:** Based on the shape of the otolith?

1
2 **GRACIELA GARCIA-MOLINER:** Yes and so I sent them a -- There was
3 a reference from NOAA on a catalog of otoliths from family or
4 something like that.
5
6 **JOE KIMMEL:** Yes, some Europeans had done that extensively,
7 based upon the shape of the otoliths what species they were.
8
9 **JORGE GARCIA-SAIS:** For sure they are eating -- Ballyhoo, they
10 will eat it too.
11
12 **GRACIELA GARCIA-MOLINER:** The dolphin in Puerto Rico
13 specifically have been reported in very shallow waters near
14 shore. They do have that reported and I can't tell you more
15 than that regarding where the dolphinfish actually feed, but the
16 type of bait has changed over the years, depending on what's
17 available, basically, but ballyhoo would be one of those and
18 mullets would be another and artificial lures.
19
20 **JORGE GARCIA-SAIS:** Mullet is another one. Their normal habitat
21 is way inshore and in the estuary, but they -- They penetrate
22 EEZ waters and that is part of their normal natural habitat for
23 reproduction, in particular.
24
25 **RICHARD APPELDOORN:** What is this?
26
27 **JORGE GARCIA-SAIS:** Mullet.
28
29 **GRACIELA GARCIA-MOLINER:** Again, one of the issues that they are
30 having in St. Croix specifically is that many of the inshore
31 areas where mullets occur have been closed off and so the
32 population of mullets have really gone down and so they are
33 trying to see if by opening up the estuaries that they can get
34 the mullet population back, because they do need the shelf edge
35 to reproduce, but they need to be inshore to grow. That's in
36 the works. They are working on trying to figure out a way of
37 opening up the waterways to get the mullet population back, but,
38 again, that's a local/state issue right now, but mullets are
39 part of the baitfish list that we had put together for later
40 use.
41
42 **JORGE GARCIA-SAIS:** Maybe mullets were replaced by the
43 artificial lures and the fact that marlins now need to be
44 released, but beforehand, most of the marlin fishery was based
45 on mullet bait and now that they don't need the mullet,
46 everything has changed. Nobody eats mullet in Puerto Rico. I
47 mean very few people eat mullet, but there are some people that
48 do. They smoke it and eat it.

1
2 **GRACIELA GARCIA-MOLINER:** I will send this around to everyone.
3
4 **RICHARD APPELDOORN:** All right. Why don't you send that out to
5 everybody and there's been a request for a small break. Let's
6 take a short break, please.
7
8 (Whereupon, a brief recess was taken.)
9
10 **RICHARD APPELDOORN:** What we have up is the list that Graciela
11 had up before and the new are in red and so you can just look
12 for the red things. Look for yellow or red under Puerto Rico
13 for the moment and those are the changes that have been made and
14 if anybody would like to question any of those, please do so
15 now. We still have the issue of the pelagics pending.
16
17 **BILL ARNOLD:** There are some that have been removed, like gray
18 snapper.
19
20 **JOE KIMMEL:** Some are in and some are out or --
21
22 **GRACIELA GARCIA-MOLINER:** Yes is yes and no means that they are
23 not in the management unit anymore.
24
25 **JORGE GARCIA-SAIS:** We're talking about Puerto Rico only, right?
26
27 **RICHARD APPELDOORN:** Right now it's for Puerto Rico.
28
29 **MIKE LARKIN:** So no means that the council --
30
31 **RICHARD APPELDOORN:** It used to be on the list and it's out.
32
33 **MIKE LARKIN:** It's out by somebody and not --
34
35 **GRACIELA GARCIA-MOLINER:** This is the original FMU and this now
36 is what the council has selected.
37
38 **MIKE LARKIN:** New is it's suggested to be added?
39
40 **GRACIELA GARCIA-MOLINER:** Yes.
41
42 **CHURCHILL GRIMES:** So cubera is in?
43
44 **GRACIELA GARCIA-MOLINER:** No, cubera was never there, but it is
45 now for Puerto Rico.
46
47 **CHURCHILL GRIMES:** Why didn't we have cubera snapper there in
48 the first place? Did we forget it?

1
2 **JOE KIMMEL:** No, it wasn't there on purpose.
3
4 **CHURCHILL GRIMES:** I know, but why didn't we? Was it a
5 purposeful --
6
7 **GRACIELA GARCIA-MOLINER:** It had to with the fact that it was
8 not really harvested, because of the ciguatoxic nature of the
9 cubera. It was part of the EFH, but not really part of the
10 landings, but now it's everywhere and there is no management.
11
12 **RICHARD APPELDOORN:** It's still ciguatoxic and it's there
13 because of it being large and long-lived. You can see
14 yellowmouth grouper was added and then margate and bluestripe
15 were taken out for the grunts and all of the porgies were taken
16 out and squirrelfishes, just one species is out. The only
17 parrotfish that goes out is the redfin, which was I believe was
18 because it was an inshore species.
19
20 **JORGE GARCIA-SAIS:** There is one missing barracuda there and I
21 wonder why.
22
23 **RICHARD APPELDOORN:** No, it's all barracuda.
24
25 **JORGE GARCIA-SAIS:** Barracuda, the southern extent is not there.
26 The species of *sphyraena picuda* is not there, but that's more
27 marine than guachancho. Guachancho is mostly estuarine. I mean
28 that's a species that you see only in bays and *picuda* is in
29 territorial waters. It's inshore, but it's more offshore than
30 guachancho.
31
32 **JOE KIMMEL:** I would have just said barracuda there, if it was
33 up to me.
34
35 **JORGE GARCIA-SAIS:** Those two, particularly guachancho, is
36 really, really estuarine. It's in brackish waters. It's in
37 embayments. If you want to fish for that thing, you go to
38 embayments with freshwater inputs and that kind of thing, you
39 know estuarine.
40
41 **JOE KIMMEL:** I am curious about the rays that are new to the
42 species list there, the manta ray and the spotted eagle ray.
43 What was the rationale for including them? Was it for
44 protection of those species or there is a large catch of them?
45 I don't know much about the landings of those species.
46
47 **RICHARD APPELDOORN:** What was your criticism of it?
48

1 **JOE KIMMEL:** It's not a criticism, but I am just curious why
2 they decided to include them, because I didn't know that there
3 was a big fishery for any of those, but if there is an
4 incidental fishery, it might --
5
6 **RICHARD APPELDOORN:** There has been a fishery for them.
7
8 **JOE KIMMEL:** I don't know.
9
10 **RICHARD APPELDOORN:** I am not asking you. I am telling you.
11
12 **JOE KIMMEL:** How are they harvested?
13
14 **RICHARD APPELDOORN:** I have no idea how they harvest them.
15
16 **JORGE GARCIA-SAIS:** They harvest them by spearfishing.
17
18 **JOE KIMMEL:** Really? It must be interesting spearing a manta
19 ray. I am in favor of including them from a protection
20 standpoint.
21
22 **RICHARD APPELDOORN:** Well, it's their life history that has them
23 in there.
24
25 **VANCE VICENTE:** There has never been a significant fishery for
26 them. That's true. There has been very sporadic -- Nobody goes
27 out for that fish.
28
29 **RICHARD APPELDOORN:** There were a couple of people in Parguera
30 decades ago who were kind of specialists. It wasn't the only
31 thing they fished, but they would go out and get them and as to
32 whether this is extensive or not depends on how the species is
33 reacting, but since they're not fecund species to begin with, a
34 scattered fishery might be sufficient to have impacts.
35
36 **JORGE GARCIA-SAIS:** Also, they were a bycatch of the gillnet
37 fishing and now that the gillnet has declined in its use, I
38 believe that that incidental catch has declined as well, but
39 there are still spear fishermen that will go for it if they are
40 not too big.
41
42 **JOE KIMMEL:** So they're sold and marketed?
43
44 **JORGE GARCIA-SAIS:** Yes, they are marketed, yes. They are sold
45 for the meat and they use the meat for empanadas.
46
47 **WALTER KEITHLY:** Do they spear fish for them in federal waters?
48

1 **JORGE GARCIA-SAIS:** I am not sure, because most of that kind of
2 input is from the area between Guanica and La Parguera and there
3 are no federal waters there, but I know there are fishermen from
4 there, which is an area that I am aware of, that if they see one
5 that is not more than 150 or 200 pounds, they will probably
6 shoot at it. I mean they sometimes end up in the hospital.

7
8 **KEN STUMP:** I just wanted to ask a clarifying question about
9 this. My understanding was that the Puerto Rico District
10 Advisory Panel recommended the rays in particular as ecosystem
11 component species and so I am not clear. My understanding is
12 this list is for managed species only and it doesn't include
13 ecosystem component species.

14
15 **GRACIELA GARCIA-MOLINER:** Exactly. This is for management only,
16 because there is a difference between what the DAP recommended
17 and the panel of experts and so the council went with the panel
18 of experts' recommendation and so in some cases it was, as you
19 said, they were EC components, but the council overwrote that
20 and went with the panel of experts, stating that they should be
21 managed for Puerto Rico.

22
23 **SHANNON CALAY:** So they did actually feel that those species
24 should be federally managed, because the ecosystem component
25 would have given you opportunity for data collection without
26 having to establish an ACL.

27
28 **GRACIELA GARCIA-MOLINER:** They kept them in this list.

29
30 **SHANNON CALAY:** It's just a cautionary note that anything that
31 goes on an FMP requires an ACL.

32
33 **GRACIELA GARCIA-MOLINER:** There were landings in fact for these
34 species, but the thinking, I think, was really in terms of
35 establishing an ACL that is equal to zero so that they would be
36 federally managed, but the harvest of them would be prohibited.

37
38 **KEN STUMP:** Is there going to be any question of considering
39 ecosystem component species, because that can be a useful
40 category, particularly, as Shannon noted, that it would allow
41 you to include the species for data collection purposes out of
42 concern about life history or potentially unknown vulnerability
43 to the fishery without having to specify ACLs and status
44 determination criteria.

45
46 It gives you a way to address a concern and put them on your
47 data collection radar screen without having to set ACLs and it
48 just seems that this list doesn't consider that possibility.

1
2 **GRACIELA GARCIA-MOLINER:** The treatment of that was, in the
3 sense of what I just said, ACL equal to zero, as for the corals.
4 There will be no take of those species, because if you go with
5 the EC component, conceivably you could prohibit their harvest,
6 but this way you can just say it and state it. That was the
7 thinking behind it.
8
9 **VANCE VICENTE:** Also, dasyatis and aetobatus are not really
10 abundant, like say other rays, which form schools of hundreds
11 and hundreds of them. They may be playing a significant role
12 ecologically. It's not abundant, but they could be playing a
13 keystone type of function.
14
15 **KEN STUMP:** I think the existing regulations, National Standard
16 1 regulations, say that ecosystem component species may
17 generally not be retained, which doesn't exclude entirely the
18 possibility that some may be landed and retained, but the
19 proposed rule to change the National Standard 1 Guidelines
20 actually relaxes those restrictions on EC designation and so if
21 that's where the agency goes in the final rule, then it will be
22 even easier, and perhaps much easier for this region to
23 designate species EC, even if they are landed. It just gives
24 you another tool that helps you to not have to set that ACL, but
25 still keep them in your view and monitor them.
26
27 **SHANNON CALAY:** How significant are the landings of these rays?
28
29 **MIKE LARKIN:** I think they're infrequent, but I think part of
30 that is I'm not sure that they show up on the form.
31
32 **GRACIELA GARCIA-MOLINER:** They don't.
33
34 **MIKE LARKIN:** So it's unclear.
35
36 **GRACIELA GARCIA-MOLINER:** There is no published reports on the
37 use of these, especially the rays, for popover stuffing and that
38 kind of thing, but that's the general concern, that they might
39 be harvested for that purpose only.
40
41 **MIKE LARKIN:** So at the moment there are no regulations?
42
43 **GRACIELA GARCIA-MOLINER:** No.
44
45 **MIKE LARKIN:** So there wouldn't be any reason for folks not to
46 report them if they could on a form. I mean they suffer the
47 problem of all write-in species, that people just don't do that
48 on any regular basis.

1
2 **GRACIELA GARCIA-MOLINER:** We looked at that and I recall that we
3 couldn't find any. There were some landings for these species,
4 because of the codes.
5
6 **MIKE LARKIN:** There are some landings, but I think it relies on
7 someone to write it in and so I don't think that there's -- We
8 can't be certain to what extent people do that. I think that's
9 just a hazard reporting.
10
11 **VANCE VICENTE:** If any fisherman, if they catch it incidentally,
12 they throw it back in the water. They don't want that tail
13 wagging around.
14
15 **KEN STUMP:** But if your federal management system changed,
16 wouldn't you change your reporting requirements so that if it
17 was an EC species that you would have it included, so that it
18 would be easier to report?
19
20 **MIKE LARKIN:** The reporting is through the commonwealth and so
21 there would be a negotiation as to how any form changes, but the
22 Puerto Rico commercial forms have been more extensive in terms
23 of the number of species that are on them compared to the Virgin
24 Islands.
25
26 **RICHARD APPELDOORN:** Even so, this would be an extreme.
27
28 **MIKE LARKIN:** Right and then you might want to be concerned
29 about if it's on the form, does that mean you can land it?
30 There could be some confusion there and so it would require some
31 thinking and some negotiation between us and the folks here on
32 the island.
33
34 **VANCE VICENTE:** Eventually it could become a target species,
35 eventually as other populations dwindle. That is what is
36 happening with the other rays. They are going after them.
37 There is restrictions on some of the other species that they go
38 for. Here, there was a problem. Back when the Endangered
39 Species Act included the turtles in the 1970s, they were selling
40 -- They were going for the Dasysis and preferring them and
41 selling them as turtle meet up in the country. That was told to
42 me by the fishermen then.
43
44 **RICHARD APPELDOORN:** Does anybody want to make any alterations
45 or recommendations for alternations, based on the discussion
46 we've had? It sounds to me like there's a serious rationale for
47 not including the guachancho in the -- That's really an
48 estuarine species and why is that on the list?

1
2 **JOE KIMMEL:** If it doesn't occur in the EEZ, I don't think it --
3
4 **JORGE GARCIA-SAIS:** Along those lines, I would recommend to
5 delete or to remove *Sphyraena guachancho*.
6
7 **RICHARD APPELDOORN:** All right.
8
9 **JORGE GARCIA-SAIS:** I don't know why the other one is not there.
10
11 **RICHARD APPELDOORN:** To me, I would have said that's the species
12 that is supposed to be there when we were talking about
13 barracuda.
14
15 **GRACIELA GARCIA-MOLINER:** With the barracuda, there is also that
16 thing that we do have them showing up. We looked at the
17 commercial landings and at the recreational landings and the
18 biostatistical information when we were looking at the criteria
19 and selecting the species for management that followed the
20 criteria.
21
22 If they made it into any one of those criteria, A through D,
23 then they would be here. There might be a species
24 misidentification problem, from what you were saying with the
25 guachancho, because in fact I actually had to look it up. That
26 might be one problem. That might be a problem just throughout
27 the list that we have here, the misidentification.
28
29 **JORGE GARCIA-SAIS:** So be it.
30
31 **GRACIELA GARCIA-MOLINER:** I resent the table, because I noticed
32 that we were missing some of the jacks and you had requested
33 that you wanted to see everything that was in the previous FMU
34 list versus what we have and so the second one that I sent to
35 you has everything, the old and the new.
36
37 **KEVIN MCCARTHY:** The other thing, back to the barracuda
38 question, is at least on the commercial form they were reported
39 as a species group and so it's hard to know what the makeup may
40 have been.
41
42 **RICHARD APPELDOORN:** Under our Criteria B, it was exclude from
43 federal management those species that are not in the EEZ. Then
44 you start looking at things that are vulnerable or whatever as
45 Criteria C and so I am not sure what happened, but it sounds to
46 me like this species should have been excluded at B and never
47 have come up for any of the other criteria and so I am making
48 the recommendation that that species be taken off the list.

1 Does anybody want to comment on that? Any opposition to it?
2 Okay. So that's one of our recommendations, because it's a
3 local species and not an EEZ species. Does anybody want to
4 recommend anything about the rays? That sounds to me like the
5 answer is no.

6
7 **VANCE VICENTE:** I am thinking.

8
9 **RICHARD APPELDOORN:** You need to think louder.

10
11 **VANCE VICENTE:** I am not a fisherman, but, for me, a stingray,
12 from speaking to fishermen and being on the ocean for the last
13 forty or fifty years, it's an incidental take.

14
15 **RICHARD APPELDOORN:** The fishermen were obviously looking at --
16 The district panel was obviously looking at it from the point of
17 view of it's data collection. Bill, again, you were in the
18 discussion of these, as was Graciela, and I think we were
19 thinking more in the sense that the ACLs would be set at zero.

20
21 The EC route allows for harvest at whatever level is going on
22 and we'll continue to collect the data, presumably. Keeping
23 them in is basically a tacit approval that we would be closing
24 the fishery in the EEZ. The effects might actually be more or
25 less the same. Are you still thinking?

26
27 **VANCE VICENTE:** No, I'm done.

28
29 **RICHARD APPELDOORN:** All right. So I suggest that we move on.

30
31 **GRACIELA GARCIA-MOLINER:** The second list that I sent to you is
32 a more complete list and this one actually has everything,
33 including all the jacks that I noticed that were not showing up
34 in the other list. If you look at the screen, this is how many
35 jacks were included in the FMU originally and if you look at the
36 no and yes, you will see that in most cases they have been
37 deleted from the species to be managed.

38
39 It's interesting that the jacks are one of those that the ACL
40 was exceeded for the recreational harvest. If you look at this
41 species list, it's more complete. I resent the table and it's
42 called "After 153 List of Species".

43
44 **JORGE GARCIA-SAIS:** Are rainbow runners highly migratory
45 species?

46
47 **JOE KIMMEL:** No, I don't think so.

48

1 **GRACIELA GARCIA-MOLINER:** But they are in the EEZ.
2
3 **JORGE GARCIA-SAIS:** I know they're in the EEZ, but are they
4 migratory species?
5
6 **GRACIELA GARCIA-MOLINER:** I think that they're migratory, but
7 they are not highly migratory. I think they kind of move around
8 in a --
9
10 **JORGE GARCIA-SAIS:** That's a convenient answer.
11
12 **GRACIELA GARCIA-MOLINER:** I don't think that they are as --
13
14 **RICHARD APPELDOORN:** The only other species I would question,
15 and I don't know what the conversation was last time, is the
16 exclusion of margate. It's the largest of the grunts and it
17 forms spawning aggregations and it used to be important in the
18 catch. It's not anymore.
19
20 **GRACIELA GARCIA-MOLINER:** We're looking at Puerto Rico.
21
22 **RICHARD APPELDOORN:** Yes.
23
24 **GRACIELA GARCIA-MOLINER:** Does it occur in the EEZ? I think
25 that was part of the issue that we were having with that
26 species.
27
28 **JORGE GARCIA-SAIS:** That species is seldom seen nowadays. It's
29 kind of like disappeared.
30
31 **RICHARD APPELDOORN:** I know and that's why I'm raising the
32 question, because it didn't used to be that way.
33
34 **JORGE GARCIA-SAIS:** It has really come down.
35
36 **RICHARD APPELDOORN:** I think you're the only one who has ever
37 reported seeing them anymore. I mean it's --
38
39 **JORGE GARCIA-SAIS:** I photographed them and I think that's about
40 the last time I saw one. 300 dives later, none, or more.
41
42 **JOE KIMMEL:** So, Rich, you're thinking that margate should be in
43 the FMP? You asked the question of why it's not here, but is
44 that because you think it should be there?
45
46 **RICHARD APPELDOORN:** I think the status is probably such that it
47 ought to be here.
48

1 **JOE KIMMEL:** I will make a motion to include white margate or
2 whatever it's called.
3
4 **RICHARD APPELDOORN:** It's just margate. There's margate and
5 then there's black margate.
6
7 **BILL ARNOLD:** What's the rationale?
8
9 **RICHARD APPELDOORN:** I don't know the word to use, but like
10 threatened status or poor status.
11
12 **JORGE GARCIA-SAIS:** It is a big drop. I mean it was probably
13 the biggest one of them all. I would agree with you.
14
15 **BILL ARNOLD:** You need to put it within the context of those
16 decision making criteria.
17
18 **WALTER KEITHLY:** What is the basis for you implying that there's
19 potentially a threat to the species?
20
21 **RICHARD APPELDOORN:** Because it used to be abundant and a
22 significant part of the catch and now you hardly ever see it.
23 It has a vulnerable life history in the sense that it forms
24 spawning aggregations that occur in the EEZ.
25
26 **VANCE VICENTE:** I would not use "threatened".
27
28 **RICHARD APPELDOORN:** I said I didn't know the word to use.
29
30 **VANCE VICENTE:** Well, a species of special concern, potentially
31 a species -- Because it has to be officially designated.
32
33 **RICHARD APPELDOORN:** That's why I didn't want to use the word
34 "threatened", because that has --
35
36 **VANCE VICENTE:** You cannot use species of special concern
37 either, which is the status of the goliath grouper. That comes
38 from --
39
40 **BILL ARNOLD:** So it definitely occurs in the EEZ and it's an
41 aggregating species and it's large, slow-growing, and
42 vulnerable?
43
44 **RICHARD APPELDOORN:** It's probably not that -- It's slow growing
45 for a grunt, but --
46
47 **BILL ARNOLD:** Whatever you guys think. The fact that it's an
48 aggregating species I think is a rationale.

1
2 **RICHARD APPELDOORN:** So it's a combination of its presumed low
3 status and vulnerability.
4
5 **VANCE VICENTE:** We can propose it as a species of special
6 concern under NMFS.
7
8 **RICHARD APPELDOORN:** That's down the road.
9
10 **BILL ARNOLD:** Do you have any evidence they occur in the EEZ?
11
12 **RICHARD APPELDOORN:** That's a good question.
13
14 **GRACIELA GARCIA-MOLINER:** Reni, are they in any of the
15 mesophotic reefs?
16
17 **JORGE GARCIA-SAIS:** I don't recall seeing them on anywhere else
18 but El Seco. I mean there might have been, but I just can't
19 recall right now.
20
21 **JOE KIMMEL:** I can't remember seeing margate -- I've seen them
22 in inshore reefs. They were around --
23
24 **JORGE GARCIA-SAIS:** They used to be common in La Parguera in
25 sixty feet and sandy bottoms where there is coral and sand.
26
27 **JOE KIMMEL:** Where there is substrate to hide under and stuff
28 like that, yes.
29
30 **JORGE GARCIA-SAIS:** Yes, they used to like that habitat, but
31 they disappeared. I mean I am not diving that much in Parguera
32 recently, but I am not seeing them anywhere.
33
34 **RICHARD APPELDOORN:** I am willing to accept that, except for the
35 spawning aggregations will occur wherever those sites are.
36 Unfortunately, the only documented one we have is El Seco and
37 that's in state waters.
38
39 **JOE KIMMEL:** I didn't know that they aggregated.
40
41 **RICHARD APPELDOORN:** Yes, they're the only grunt that we know
42 anything about the reproduction.
43
44 **BILL ARNOLD:** If they reappear at the carefully managed Bajo de
45 Sico, then we can add them in later. Sorry.
46
47 **GRACIELA GARCIA-MOLINER:** No comment.
48

1 **RICHARD APPELDOORN:** From us, we can come up with some criteria,
2 I mean information, that says they are going to come from the
3 EEZ and the recommendation.
4
5 **BILL ARNOLD:** Seriously, if some reason arises to add a species
6 to management, we can do that.
7
8 **RICHARD APPELDOORN:** I would, however, make a recommendation
9 that we would request Puerto Rico DNER to look into management
10 measures for this species.
11
12 **WALTER KEITHLY:** (The comment is not audible on the recording.)
13
14 **RICHARD APPELDOORN:** Yes. I mean you could say the thing and --
15 Graciela, if you take out from the "presumably low status" and
16 then copy that to the end of the -- Yes, that's right. That's
17 why we recommend that DNER look at this.
18
19 **JORGE GARCIA-SAIS:** Did we ever have any kind of landings data
20 for that species in particular or would it be kind of lumped
21 into grunts?
22
23 **RICHARD APPELDOORN:** Kevin was saying it's not on the list and
24 so they have to self-report. We have to look at the TIP data to
25 see if --
26
27 **GRACIELA GARCIA-MOLINER:** They are in the TIP data.
28
29 **KEVIN MCCARTHY:** Let me see if there was just a grunt category.
30
31 **RICHARD APPELDOORN:** There's a lot of stuff in that one
32 category.
33
34 **VANCE VICENTE:** Graciela, what is the Spanish common name for
35 the margate?
36
37 **GRACIELA GARCIA-MOLINER:** (The comment is not audible on the
38 recording.)
39
40 **KEVIN MCCARTHY:** It would have just been lumped in grunts, as
41 you said.
42
43 **RICHARD APPELDOORN:** All right. Any other comments?
44
45 **GRACIELA GARCIA-MOLINER:** (The comment is not audible on the
46 recording.)
47
48 **RICHARD APPELDOORN:** Out of how many measurements?

1
2 **GRACIELA GARCIA-MOLINER:** Since nineteen-eighty-something to --
3
4 **RICHARD APPELDOORN:** That's total?
5
6 **GRACIELA GARCIA-MOLINER:** Yes, total.
7
8 **JORGE GARCIA-SAIS:** How many, Graciela?
9
10 **GRACIELA GARCIA-MOLINER:** 383 and only eighty-seven since
11 between 2002 and 2009.
12
13 **RICHARD APPELDOORN:** I suggest we look at St. Croix. There's
14 been a lot more removal there.
15
16 **TODD GEDAMKE:** Richard, I've got just one question with the
17 jacks. Can you remember the rationale just for like bar jack
18 and blue runner, in particular?
19
20 **BILL ARNOLD:** To include them?
21
22 **TODD GEDAMKE:** To not. They are all gone.
23
24 **BILL ARNOLD:** They're shallow-water species, most of them.
25
26 **RICHARD APPELDOORN:** I think they were shallow-water species.
27
28 **GRACIELA GARCIA-MOLINER:** They occur in the state waters and not
29 in the EEZ.
30
31 **RICHARD APPELDOORN:** That's what we meant by shallow.
32
33 **TODD GEDAMKE:** We'll be here forever if we go through each
34 individual --
35
36 **RICHARD APPELDOORN:** No, just if something pops out.
37
38 **TODD GEDAMKE:** Amberjack. Amberjack, both bar and blue are
39 shallow-water and they are a good part of the catch and I am
40 looking right now, but as we get to the other islands, St.
41 Thomas in particular, it's a good part of the catch.
42
43 **GRACIELA GARCIA-MOLINER:** The greater amberjack?
44
45 **RICHARD APPELDOORN:** I don't think that's --
46
47 **TODD GEDAMKE:** I was just trying to figure out why.
48

1 **JORGE GARCIA-SAIS:** They are throughout. I mean the largest
2 part of the catch is in state waters, because the habitat is
3 larger in the state waters, but they occur almost everywhere. I
4 mean I have records of amberjack at 600 feet and so that's not
5 shallow.
6
7 **GRACIELA GARCIA-MOLINER:** There are other issues with the jacks.
8 They do have regulations in Puerto Rico. Number one, there is
9 very few -- I mean jacks are jacks in most cases and they don't
10 have any specific data. That's one and two is most of the
11 harvest is from the state rather than from the EEZ and, in this
12 case, we also looked at the recreational harvest of these
13 species and what was the other thing? They are not really
14 economically important, in most cases, because most jacks are
15 associated with ciguatera and that type of thing and so --
16
17 **JORGE GARCIA-SAIS:** So you want to delete them?
18
19 **RICHARD APPELDOORN:** They're already gone except for the three
20 species and I'm sure the fishermen were -- I wouldn't comment on
21 any jack, because --
22
23 **GRACIELA GARCIA-MOLINER:** St. Thomas wanted to keep the blue
24 runner, because that's one of their main species.
25
26 **TODD GEDAMKE:** So is bar jack.
27
28 **GRACIELA GARCIA-MOLINER:** Again, one of the things might be that
29 they might be calling everything the same and so --
30
31 **TODD GEDAMKE:** They are both hardnose.
32
33 **RICHARD APPELDOORN:** Right and hardnose is important and, yet,
34 here they say rainbow runner is out, but --
35
36 **GRACIELA GARCIA-MOLINER:** The blue runner is the one that they -
37 -
38
39 **VANCE VICENTE:** In St. Thomas, it's number four.
40
41 **TODD GEDAMKE:** Yes, like four and nine or something like that.
42 They're both way up there.
43
44 **VANCE VICENTE:** Lobster, triggerfish, red hind, and blue runner.
45 That's St. Thomas/St. John.
46
47 **GRACIELA GARCIA-MOLINER:** The blue runner is the one that they
48 want to keep.

1
2 **RICHARD APPELDOORN:** Yes.
3
4 **GRACIELA GARCIA-MOLINER:** We know that we think that catch have
5 other jacks in there.
6
7 **RICHARD APPELDOORN:** In St. Thomas.
8
9 **GRACIELA GARCIA-MOLINER:** Yes.
10
11 **KEVIN MCCARTHY:** It is on the form as blue runner, aka hardnose.
12 If there are several hardnose --
13
14 **TODD GEDAMKE:** It's bar jack. They are catching that as a
15 significant bycatch in their yellowtail. I know nothing about
16 them in Puerto Rico.
17
18 **GRACIELA GARCIA-MOLINER:** The yellowtail snapper is over the
19 edge and it's EEZ, the harvest.
20
21 **KEVIN MCCARTHY:** Bar jack is in there as a separate entry for
22 the net fishery, for the net only.
23
24 **TODD GEDAMKE:** Hook and line is -- I've gotten us into St.
25 Thomas and I didn't mean to do that. It's just the logic across
26 the board.
27
28 **GRACIELA GARCIA-MOLINER:** Again, I mean that's one of the things
29 that this is supposed to be reflecting, the differences among
30 the islands. Jacks is one thing that -- I am trying to find the
31 regulation for Puerto Rico to see how many jacks are actually
32 banned from being sold.
33
34 **RICHARD APPELDOORN:** The point I would say for Puerto Rico, and,
35 again, correct me if I'm wrong, those of you who were in the
36 meeting, the decisions on the jacks had to be driven by the
37 fishermen themselves were saying these are important and this
38 was backed up by the DAP, because they're still on the list.
39
40 **GRACIELA GARCIA-MOLINER:** The three jacks that are new, yes.
41
42 **RICHARD APPELDOORN:** Yes and so that's the fishermen themselves
43 saying they want them included.
44
45 **GRACIELA GARCIA-MOLINER:** Also, some information, especially on
46 the rainbow runner, I think it was that it came out of the
47 landings information. There is the recreational side of things.
48

1 **RICHARD APPELDOORN:** Yes and rainbow runner would have been one
2 of those.
3
4 **JOE KIMMEL:** If I am a fisherman and I look at that list there
5 and I see, oh, I can catch as many blue runners, horse-eye jack,
6 blackjack, almaco jacks, bar jacks, and greater amberjacks as I
7 want to in Puerto Rico, because they're not in the FMP -- I
8 don't know that that source of information is what we're really
9 needing to include or exclude these species.
10
11 I would look at things that occurred in the EEZ, more than
12 likely, more than the other ones. There, I would say the
13 greater amberjack and almaco jack and the blackjack might be
14 things that are more deepwater than some of the other ones. I
15 don't know and I don't know how this list of jacks came about,
16 but it seems confused to me. I don't see the rationale. You
17 either include them all or you exclude them all or you just have
18 the deepwater ones or something.
19
20 **GRACIELA GARCIA-MOLINER:** Well, I mean Puerto Rico actually
21 prohibits the selling of the greater amberjack, the blackjack --
22 I am going to see what else they --
23
24 **VANCE VICENTE:** Because of ciguatera, right? They are
25 ciguatoxic.
26
27 **JORGE GARCIA-SAIS:** I don't see the pompano there.
28
29 **GRACIELA GARCIA-MOLINER:** The pompano is there.
30
31 **JORGE GARCIA-SAIS:** No, not the pompano there, but I mean the
32 permit. Those grow much bigger and probably as big as thirty or
33 forty pounds and it's not there. It's one of the biggest jacks.
34
35 **GRACIELA GARCIA-MOLINER:** I mean really, we looked at everything
36 that was within the top percent of the landings. We looked at
37 the distribution from the EEZ and the states from the
38 information from the commercial and recreational and so whenever
39 there was an indication that they landed from the EEZ, it was
40 taken into account.
41
42 **KEVIN MCCARTHY:** Permit is not on the form and so that may
43 explain why we didn't see a lot of landings.
44
45 **JORGE GARCIA-SAIS:** There is a recreational fishery of permits.
46
47 **KEVIN MCCARTHY:** Recreational could be a very different matter.
48

1 **GRACIELA GARCIA-MOLINER:** Again, when we were doing this this
2 past year, we looked at everything, including everything that
3 didn't have an ACL. The whole dataset of the recreational and
4 the commercial catch was examined in terms of the amount of
5 pounds landed over the number of years that it was landed and as
6 far back as it was possible to do that had been -- We looked at
7 the codes versus the Science Center codes and we looked at
8 everything that was in the dataset that could give us an
9 indication of where these landings were coming from and were
10 really more so from the EEZ.

11
12 We looked at depth distribution and whether it actually said
13 less than thirty meters or more than thirty meters and we made
14 the caveat that we were using the thirty-meter shelf edge as the
15 difference between the state and the EEZ.

16
17 Any which way that we could come up with an answer to determine
18 whether these species were happening in the EEZ or not, which
19 was one of the first criteria that we had to look at, was used.

20
21 **JORGE GARCIA-SAIS:** I am just saying because it's a commercially
22 -- It's a good eating fish, you know, and it's one of the
23 biggest growing jacks and it's particularly common in Aguadilla.

24
25 **GRACIELA GARCIA-MOLINER:** Maybe one of the recommendations of
26 the SSC should be that there should be a -- I can look at the
27 Caribbean data for the TIP data and do an evaluation of what's
28 being landed across the islands to actually send port agents.

29
30 **JORGE GARCIA-SAIS:** What I'm afraid is that's a fish that
31 probably does not get that much to the fish market. They are
32 usually kept.

33
34 **GRACIELA GARCIA-MOLINER:** What is the name, common name?

35
36 **JORGE GARCIA-SAIS:** Permit.

37
38 **GRACIELA GARCIA-MOLINER:** We used the SEDAR Caribbean Data
39 Evaluation Workshop that was done in 2009 and then updated the
40 information from the number of specimens that had been measured
41 from 2009 onward and it doesn't show, but that doesn't mean that
42 they are not harvested, et cetera. It's just that we don't have
43 the information.

44
45 **JORGE GARCIA-SAIS:** I know they are harvested, because sometimes
46 that's one of the fishes that wins in the spearfishing contests.
47 If you get a forty-pound permit, you won. It's a big target,
48 too.

1
2 **KEVIN MCCARTHY:** In the recreational, they were in the 95th
3 percentile and so they didn't fall within the 90th percentile
4 that was our cutoff for the recreational.

5
6 **RICHARD APPELDOORN:** So was crevalle jack. I don't think we
7 should be revisiting -- I mean all of the stuff you're talking
8 about, where does it fit in the recreational and where does it
9 fit in the commercial, et cetera, was it on the form, all of
10 this would have come out when we were first looking at these
11 species lists.

12
13 **GRACIELA GARCIA-MOLINER:** It will be revisited when we're going
14 -- I mean we need to look at the clustering analysis that's been
15 done and it will come also up again when we deal with the
16 reference points, because if at that point we've gone to the
17 Science Center and said we need to look at all of these species
18 and they come back and tell you the only thing that you have is
19 commercial catch or the only thing that you have is recreational
20 catch and that's it, then you would have to revisit what you can
21 recommend to the council regarding these species, because you
22 have to recommend the ABC to the council. This is a good
23 exercise, because it has put species in our list of things that
24 we need to look again and so --

25
26 **KEN STUMP:** I think that this discussion of jacks sort of
27 captures a lot of the anxiety that some of us feel about this
28 list and potentially arbitrary selection of some species which
29 happen to be currently important in the landings or in the
30 fishery and are therefore included, but others clearly, as
31 discussion around the table indicates, are being caught in the
32 jacks complex and they are not included.

33
34 I think whether or not you decide to revisit the list that you
35 have, it would seem important to make an explicit recommendation
36 to the council that this list needs to be revisited on a
37 regular, periodic basis as a way of making sure that you're
38 capturing the species that are actually being caught or killed.

39
40 Maybe some of them are being discarded at sea in potentially
41 significant numbers, because of ciguatera or something else. We
42 don't know, but hopefully we are going to get better data over
43 time and that should be reflected in the species list and the
44 only way to do that is to have some sort of a regular, periodic,
45 formal review of your data to make sure that your list
46 accurately reflects the best scientific information available.

47
48 **RICHARD APPELDOORN:** I think that's a good idea. I think the

1 time to make that recommendation is after we get through the
2 species lists, because that's going to cover all of these lists,
3 just in the sense of the hierarchy of where it would go, but
4 that sounds like a very good idea indeed. If we don't get to it
5 at that time, please remind me.

6
7 **GRACIELA GARCIA-MOLINER:** I forgot to mention the fishery-
8 independent surveys that we also looked at to come up with the
9 list. There is going to be a limit to the amount of information
10 that you're going to get, given that five years ago the forms
11 changed in Puerto Rico and the Virgin Islands to gather species-
12 specific information in the Virgin Islands, but actually we
13 reduced the number of species that were in the list for Puerto
14 Rico. That is really going to be the limiting factor in how
15 often you can review the list of species based on the commercial
16 catch. Do you want to move on to St. Croix or St. Thomas?

17
18 **RICHARD APPELDOORN:** Yes, please. I also might point out that
19 it's 12:30. This might be a good time to take a break.

20
21 **GRACIELA GARCIA-MOLINER:** All right and so you -- I think
22 everyone here knows places to go eat.

23
24 **RICHARD APPELDOORN:** Can we be back in an hour? Is that
25 feasible?

26
27 (Whereupon, the meeting recessed for lunch on December 8, 2015.)

28
29 - - -

30
31 December 8, 2015

32
33 TUESDAY AFTERNOON SESSION

34
35 - - -

36
37 The Scientific and Statistical Committee of the Caribbean
38 Fishery Management Council reconvened at the CFMC Headquarters,
39 San Juan, Puerto Rico, Tuesday afternoon, December 8, 2015, and
40 was called to order by Chairman Richard Appeldoorn.

41
42 **GRACIELA GARCIA-MOLINER:** The process of selecting these species
43 was as follows. We went through all of the species that are
44 already regulated and so the council decided to include all of
45 those right off the bat and so this was to go through the
46 different tables that we presented to the council and are these
47 tables that you will be looking at in the next five minutes came
48 from.

1
2 Everything that had regulations in the EEZ for Puerto Rico, St.
3 Thomas, and St. John was included de facto and I am just showing
4 this because it shows the things that went through why they were
5 excluded and this is what you have in your document also, and
6 why they were included.

7
8 It went for every island for every single species that we had in
9 the commercial landings, in the recreational landings, in the
10 TIP database. We followed the instructions of the stepwise
11 criteria that we were using to determine whether they should be
12 included or not.

13
14 Some of those actually had a number of questions regarding their
15 biology or whether they were in the state or EEZ and those were
16 specifically passed along to the DAPs, and the three presidents
17 of the DAPs were present at all of the discussions, to see, from
18 the fishermen's perspective, if these species occur in the EEZ
19 or not. That's just an example of the question.

20
21 Everything that we could get our hands on was used to determine
22 whether they should be included or not and so that's what we
23 presented to the council. We used the A, B, C, and D criteria
24 to determine if they were to be included or not and so it was
25 not an arbitrary process.

26
27 It was, as the SSC had set it up, it was supposed to be very
28 objective and you know these things about these species and you
29 follow this in a stepwise manner and you will end up with a list
30 of species that should be included for federal management.

31
32 All of that happened and now this is the list you received in
33 the email and then it summarizes the species that were already
34 in the FMPs, everything that was in there for the finfish, and
35 it includes everything that should be included because of the
36 process that was followed by the different groups that looked at
37 this and it excludes everything that didn't meet the criteria.

38
39 We are taking notes on the species that you have been talking
40 about this morning, because if there are some concerns, they
41 should be addressed and they will be addressed as such, but it's
42 really important that we keep looking at the species that we
43 have on the list and then go on to Action 2 and Action 3.

44
45 The reason why we are paying a lot of attention to what you're
46 discussing is because when we get to Action 3, that's where
47 we're going to really -- If we have information that we need to
48 set the reference points, because the SSC has to set the ABC and

1 give that recommendation to the council. If it's not possible
2 to do that, then you will have to do the same thing that you did
3 during the ACL amendments and that will be to look at the
4 commercial catch information and see if with that you can set up
5 a proxy for the ACL.

6
7 We are going to, in addition to that, look at the SEDAR-46
8 outcome or not outcome, but the work in progress that is looking
9 at models to see how we can treat the U.S. Caribbean data to
10 determine what the status of the stocks are.

11
12 Having said all of that, we have established a very -- What the
13 SSC looked at and told the council that it was an objective type
14 of approach to determine what species should be included for
15 federal management or not. I just wanted to make sure that we
16 were on the same page on where we got to where we are. Any
17 questions? Then we can continue on with St. Croix and St.
18 Thomas.

19
20 **TODD GEDAMKE:** So we'll be revisiting these in Action 2 or 3,
21 but if there are --

22
23 **GRACIELA GARCIA-MOLINER:** Anything that jumps out now that we
24 did with the pelagics and a recommendation on that --

25
26 **TODD GEDAMKE:** If something is excluded now though, it's not
27 going to be taken to the next phase.

28
29 **GRACIELA GARCIA-MOLINER:** It shouldn't be. It didn't meet any
30 of the criteria. If there is something that you know that
31 didn't come up during the revision of the information, let us
32 know, but the issue with the clustering, I think that is going
33 to be very important in also showing us what the actual reality
34 of the fisheries is and what's landed with what and how that
35 affects it.

36
37 **BILL ARNOLD:** The draft list of species still has to go to
38 public hearings.

39
40 **GRACIELA GARCIA-MOLINER:** This is draft. This is the beginning
41 of the process. This has gone to the advisory panels and to the
42 council and actually it did go, at one point, to scoping
43 meetings, because when the council was deciding to go towards
44 the island-based FMPs, we used some examples of species for
45 people to tell us if they should be included or not, like the
46 octopus, and so the stakeholders have seen it and they know that
47 this is happening and people, when they come to the meetings,
48 they talk about what species to include or not, even if it's not

1 directly related to this, but for Bajo de Sico and Abrir la
2 Sierra and Tourmaline, they brought up a number of species that
3 were in there and so they are in federal waters, et cetera.

4
5 This is a draft at this stage and it still has to go to the
6 council next week and it still has to go through the whole
7 process of incorporating the data and analyzing the data and
8 setting it up for a public hearing draft. That's not going to
9 happen in the next six months.

10
11 **WALTER KEITHLY:** You sent a calendar out of the expected dates
12 in one of your emails earlier.

13
14 **GRACIELA GARCIA-MOLINER:** There is information on the timeline
15 that this should follow, because this is a draft. If the
16 council needs to hear something specific about what they
17 shouldn't be or they should be, the council is waiting to hear
18 about that too, but in terms of the ones that we know for sure
19 that need to be federally managed, those have to -- We need to
20 move the whole process along. Okay? Should we go to St. Croix
21 now?

22
23 **ST. CROIX**

24
25 **RICHARD APPELDOORN:** Yes and as introduction to that, keep in
26 mind that there are substantial differences between the regions.
27 All of St. Croix's shallow habitat essentially is in local
28 waters and it's only Lang Bank, which tends to be deeper, is in
29 federal waters.

30
31 St. Croix has a big commercial trap fishery that drives a lot of
32 what's being included and what's not and so there are
33 differences in distributions and importance, depending on the
34 nature of the fisheries.

35
36 **BILL ARNOLD:** Richard, did you mean St. Thomas in that last
37 statement?

38
39 **RICHARD APPELDOORN:** The trap fishery?

40
41 **BILL ARNOLD:** Yes.

42
43 **RICHARD APPELDOORN:** Yes and sorry. Did I say St. Croix? I
44 meant St. Thomas.

45
46 **GRACIELA GARCIA-MOLINER:** Which is completely different from St.
47 Croix. Most of the information that we also have available in
48 terms of the surveys is really restricted to less than a thirty-

1 meter depth and so that's one big issue that we kept coming
2 across and had to use information from other areas that they
3 have been seen in deeper waters, so that we would then think
4 that they were in the EEZ, et cetera.

5
6 There are a number of limitations to also the fishery-
7 independent surveys that we looked at in terms of deciding
8 whether they should be included or not and so the best available
9 information -- We actually made phone calls to people to find
10 out if such and such has been seen in the EEZ or not. So every
11 stone was turned.

12
13 **RICHARD APPELDOORN:** Do you have what the reduction was in St.
14 Croix in terms of number of taxa?

15
16 **GRACIELA GARCIA-MOLINER:** From what it used to be?

17
18 **RICHARD APPELDOORN:** Yes, to what it is now.

19
20 **GRACIELA GARCIA-MOLINER:** Spiny lobster is forty-six now and it
21 used to be -- Do you have that number for what it used to be
22 before?

23
24 **RICHARD APPELDOORN:** Used to be should be the same thing for
25 everything, right? That would be eighty-nine.

26
27 **GRACIELA GARCIA-MOLINER:** Now it's forty-six. One thing that
28 was noticeable for St. Croix is that they don't harvest some of
29 the deepwater snappers. Cubera is a no and yellowmouth
30 historically, they don't think that it has been present, at
31 least not in great numbers in St. Croix.

32
33 **RICHARD APPELDOORN:** They did include redfin parrotfish though,
34 because of its importance to them.

35
36 **GRACIELA GARCIA-MOLINER:** Yes and they only kept the bluestripe
37 grunt and the white grunt. They did include the longspine
38 squirrelfish, but did away with all of the jacks and all the
39 other squirrelfish and the tilefish and the porgies and the
40 goatfish.

41
42 One of the reasons that most people were doing away with the
43 goatfish is because with the two-inch mesh size it's not being
44 harvested that much anymore. They did away with all the
45 filefish and the boxfish and the wrasses. They did not include
46 any of the barracuda and they included only the dolphinfish and
47 none of the little tunny, blackfin or the mackerels, except for
48 the wahoo. That is St. Croix. The new ones were -- There were

1 no new ones for St. Croix. The wahoo.
2
3 **RICHARD APPELDOORN:** Dolphin is in there, but we're revisiting
4 that. That was because --
5
6 **GRACIELA GARCIA-MOLINER:** They do include wahoo, but not the
7 other ones, because of the effect that wahoo has in St. Croix.
8
9 **VANCE VICENTE:** Under the parrotfish, no midnight and no blue
10 and no rainbow or --
11
12 **GRACIELA GARCIA-MOLINER:** They kept management for all of the
13 parrotfish and they already have size limits in place.
14
15 **RICHARD APPELDOORN:** They are all yes.
16
17 **VANCE VICENTE:** I thought they were not supposed to --
18
19 **GRACIELA GARCIA-MOLINER:** There are three that are banned, but
20 because they are regulated in the --
21
22 **VANCE VICENTE:** That's what I am saying.
23
24 **RICHARD APPELDOORN:** Yes, they are included. If it says
25 "parrot" on it, it's included in St. Croix.
26
27 **GRACIELA GARCIA-MOLINER:** One of the only concerns is that this
28 species here, one of the wrasses, is included as a parrotfish in
29 their catch and so they catch it and they report it as a
30 parrotfish.
31
32 **KEN STUMP:** Mr. Chairman, I have a question. It came to my
33 attention, when I saw the official lists of species, that
34 yellowedge grouper is excluded in St. Croix under Grouper Unit 5
35 and it was in St. Thomas/St. John and Puerto Rico for Grouper
36 Unit 5.
37
38 I just wonder -- It originally I think was included by the
39 District Advisory Panel in St. Croix and so I wondered why it
40 fell out and I can't remember whether the expert panel -- I
41 think the expert panel also recommended including it originally
42 in St. Croix.
43
44 **BILL ARNOLD:** Yellowedge?
45
46 **GRACIELA GARCIA-MOLINER:** Yellowmouth.
47
48 **KEN STUMP:** No, this says yellowedge. The list you sent said it

1 was out.

2
3 **GRACIELA GARCIA-MOLINER:** There were some -- This one here, you
4 see that there are two in blue, because the record had to be
5 revised. We read the verbatim transcription of the council and
6 so anything -- Those two we had some doubts about and so they
7 were redone and revised and it's included here.

8
9 The yellowmouth, however, in St. Croix, from the DAP and the
10 information at the last council meeting, it's just a grouper
11 that was never really present in St. Croix. Again, we have to
12 be alert to the fact that there might be some misidentification
13 of the species, but it's actually not recorded in the updated
14 fish list of St. Croix. That's a correction, Ken. Anything
15 specific about St. Croix and the list?

16
17 **RICHARD APPELDOORN:** Not for me, other than the pelagics, that
18 whole pelagic issue.

19
20 **GRACIELA GARCIA-MOLINER:** Okay.

21
22 **ST. THOMAS/ST. JOHN**

23
24 **RICHARD APPELDOORN:** Then St. Thomas and St. John.

25
26 **GRACIELA GARCIA-MOLINER:** Again, this one in blue here was
27 because we had to go back to the verbatim transcription and make
28 sure that the dog snapper had been --

29
30 **RICHARD APPELDOORN:** What is the answer, because mine is just
31 blank.

32
33 **GRACIELA GARCIA-MOLINER:** No and yes for the yellowedge.

34
35 **RICHARD APPELDOORN:** I saw that one.

36
37 **GRACIELA GARCIA-MOLINER:** Again, the deepwater snapper has lost
38 two of the species and this one is now, including conch and
39 lobster, sixty-one species for St. Thomas, sixty-one out of
40 eighty-nine. St. Thomas included yellowmouth, which is a new
41 species.

42
43 **BILL ARNOLD:** Graciela, Maria says yellowedge is out by a motion
44 of the council.

45
46 **GRACIELA GARCIA-MOLINER:** So I messed up.

47
48 **BILL ARNOLD:** Remember there is us and then there's the council

1 and then there's Maria and so --
2
3 **TODD GEDAMKE:** She's listening to you right now too.
4
5 **BILL ARNOLD:** Yes and I was serious.
6
7 **GRACIELA GARCIA-MOLINER:** I have the verbatim transcription and
8 so I can look up the --
9
10 **BILL ARNOLD:** That's what she said, look at the verbatim.
11
12 **GRACIELA GARCIA-MOLINER:** I don't think we're going to have
13 species-specific information anyhow, but that is St. Croix.
14
15 **RICHARD APPELDOORN:** I don't think anyone is arguing it one way
16 or the other, but just make sure that whatever the decision was
17 is reflected on the table.
18
19 **BILL ARNOLD:** Yes, we've got to get these right. The motion
20 says to include yellowedge grouper as an EC species.
21
22 **RICHARD APPELDOORN:** Who was saying that?
23
24 **BILL ARNOLD:** The Caribbean Council. Motion Number 2 is the
25 council moves to accept the DAP-STX recommendation to include
26 the yellowedge grouper as an ecosystem component species. The
27 motion carries.
28
29 **RICHARD APPELDOORN:** Which island?
30
31 **BILL ARNOLD:** St. Croix only, the St. Croix DAP. That's
32 verified in Motion 3.
33
34 **VANCE VICENTE:** What's the reasoning behind it?
35
36 **BILL ARNOLD:** We would have to go back to the DAP to find their
37 rationale.
38
39 **CARLOS FARCHETTE:** I have the answer. It's because they weren't
40 too sure how the fishery was. It's not something that's caught
41 that much, but just to be on the safe side, they wanted --
42
43 **RICHARD APPELDOORN:** Ecosystem component species doesn't get
44 them some kind of management. It gets recorded.
45
46 **BILL ARNOLD:** Yes, it's a whole different topic.
47
48 **GRACIELA GARCIA-MOLINER:** The groupers, basically all of them

1 would make it, because of their vulnerability. I mean they
2 aggregate for spawning and they change sex and they have slow
3 growth. The issue is going to be the same. It's going to be
4 all groupers versus species-specific information for the
5 groupers, especially now that yes, there is species-specific
6 information for the Virgin Islands, but it's only for five or
7 six of the groupers rather than the whole lot.

8
9 **BILL ARNOLD:** As it stands, the yellowedge is not included in
10 St. Croix.

11
12 **GRACIELA GARCIA-MOLINER:** I had to go and look at the verbatim,
13 because one thing is the motion and the other thing is what it
14 says in the verbatim minutes. I will put "EC?". Does it show
15 up, Mike, in the clustering analysis?

16
17 **MIKE LARKIN:** The list I have I got from Maria back in -- It
18 looks like it was a draft and it's not in the list I got from
19 Maria and so I didn't filter for it, because it was not on the
20 list.

21
22 **GRACIELA GARCIA-MOLINER:** Todd, did you see it in any work that
23 you were doing in St. Croix?

24
25 **TODD GEDAMKE:** No, but you do remember this is the exact example
26 of species misidentification that we used at the data workshop.
27 This is the one that we found out the scientists lacked
28 identifying as much as the fishermen did.

29
30 **JOE KIMMEL:** Which species?

31
32 **TODD GEDAMKE:** Yellowmouth.

33
34 **GRACIELA GARCIA-MOLINER:** Are there any more specific questions
35 about St. Thomas?

36
37 **RICHARD APPELDOORN:** Okay. If not, that, I think, brings us
38 back to the situation we were talking about relative to the more
39 pelagic species and with that comes Walter's recommendations. I
40 guess the first thing I would note is I think we're dealing with
41 -- Between the mackerel, tunas, and dolphin, we're dealing with
42 species that have some really different, or potentially very
43 different, degrees of migration, dolphin being on the extreme
44 end and we have things on the mackerels that we just don't know.

45
46 I would be uncomfortable listing them all under one
47 recommendation, especially since the allocation issues refers to
48 dolphin and not the other species. I think, Walter, your

1 recommendation really speaks directly to dolphin and not
2 necessarily the other species.
3
4 **WALTER KEITHLY:** We decided to break it out into the two groups
5 there.
6
7 **RICHARD APPELDOORN:** That would be dolphin and wahoo together
8 and then the others?
9
10 **WALTER KEITHLY:** It was to delete all of them, but you made --
11
12 **RICHARD APPELDOORN:** Your justifications really to dolphin.
13
14 **WALTER KEITHLY:** Yes, the justification is more for dolphin, I
15 think.
16
17 **GRACIELA GARCIA-MOLINER:** And wahoo.
18
19 **WALTER KEITHLY:** Do you have the same regulations? Do you have
20 regulations?
21
22 **RICHARD APPELDOORN:** No, we don't have regulations.
23
24 **GRACIELA GARCIA-MOLINER:** The state doesn't have regulations and
25 the federal government doesn't have any regulations for wahoo or
26 dolphin in the U.S. Caribbean EEZ.
27
28 **WALTER KEITHLY:** Do you have any controversy recreational to
29 commercial with wahoo?
30
31 **RICHARD APPELDOORN:** Not to my knowledge.
32
33 **GRACIELA GARCIA-MOLINER:** In Puerto Rico specifically, it would
34 be more an issue with the divers that spear wahoo in closed
35 areas and that type of thing, but it's not specific to an
36 allocation problem.
37
38 **TODD GEDAMKE:** Are we talking specifically Puerto Rico or in
39 general?
40
41 **GRACIELA GARCIA-MOLINER:** Do you want to make it specific to
42 Puerto Rico?
43
44 **WALTER KEITHLY:** I had started off just with Puerto Rico, but
45 Richard suggested --
46
47 **RICHARD APPELDOORN:** I don't see how the issue is going to
48 change.

1
2 **KEVIN MCCARTHY:** You had asked about landings and seven weeks
3 ago, wahoo was the third highest caught species on St. Croix and
4 it was the sixteenth highest species caught in St. Thomas.
5
6 **RICHARD APPELDOORN:** Wahoo is more important over there.
7
8 **KEVIN MCCARTHY:** From the recreational fishery in Puerto Rico --
9
10 **TODD GEDAMKE:** I don't know what was going on, but there was
11 wahoo everywhere and people were taking a lot.
12
13 **GRACIELA GARCIA-MOLINER:** It's a seasonal species.
14
15 **RICHARD APPELDOORN:** Yes, if they're in the season, but, as
16 Kevin is pointing out, in the recreational catch -- That is
17 actually averaged over a bunch of years too, but there --
18
19 **KEVIN MCCARTHY:** I can't remember the years, but I'm assuming
20 that they were all available years, which was the beginning of
21 the 2000s.
22
23 **GRACIELA GARCIA-MOLINER:** The dolphin and the wahoo, the season
24 that they are found here, is it a reproductive peak or --
25
26 **RICHARD APPELDOORN:** Dolphin seems to spawn everywhere and so
27 yes, you're definitely finding both reproductive individuals and
28 you're definitely finding little juveniles as they pass through
29 Puerto Rico, but I think that's pretty much true for everywhere.
30
31 **GRACIELA GARCIA-MOLINER:** I mean there was that problem at some
32 point or at least testimony from the council that there was too
33 much recreational harvest of the juveniles, which in fact could
34 eventually create a problem for the population that is fished
35 here and somewhere else.
36
37 **RICHARD APPELDOORN:** In Puerto Rico, there is definitely a trend
38 that as recreational fishing is going and as commercial fishing
39 is more directed at dolphinfish that it becomes more -- They are
40 spreading out the season more and so the small fish have always
41 been around, to some degree, but now, since there is more
42 fishing out there, they're going after those things, whereas
43 before they would wait for the big ones.
44
45 You are seeing a shift to include more small ones. This is not,
46 to me, to say that the big ones aren't available, but it's
47 fishing more outside the big fish season and so are bringing
48 those smaller fish in. That may be indicative on the stress of

1 the other resources, but it's not really saying a whole lot
2 about what that impact is on dolphinfish as a whole.

3
4 On juveniles, it's going to be somebody else's -- Those are the
5 ones they're going to fish off of Florida or something like that
6 as adults, but if we're saying our catch is really small
7 relative to the South Atlantic, that's not the issue here. The
8 issue is more what is the South Atlantic doing to us.

9
10 **VANCE VICENTE:** Wahoo was number seven, according to the new
11 landings, between 2012 and 2013. That's significant. It's
12 number twenty in St. Thomas.

13
14 **RICHARD APPELDOORN:** Could I offer a modification to your
15 recommendation, Walter?

16
17 **WALTER KEITHLY:** We already have. We might as well add a few
18 more.

19
20 **RICHARD APPELDOORN:** I am recommending that that recommendation
21 be restricted to dolphin and wahoo, because the justification is
22 based on dolphin, but we're assuming wahoo are similar, to some
23 degree, in their behavior.

24
25 To remove them from the management measure here, but
26 recommending that due to their extremely high importance in both
27 the commercial and recreational fisheries that the council
28 engage at least the other councils to initiate regional
29 management for these two species.

30
31 **WALTER KEITHLY:** Again, I would like to know why they dropped
32 out initially.

33
34 **RICHARD APPELDOORN:** Who dropped out?

35
36 **GRACIELA GARCIA-MOLINER:** We did. The Caribbean Council was
37 engaged in the early 2000s in the tri-council management of
38 dolphin and wahoo, for which there were specific recommendations
39 and most of the recommendations had to do with allocation issues
40 and not being a biological problem with the species, the council
41 decided not to pursue --

42
43 **RICHARD APPELDOORN:** Here is my point. How do they know whether
44 there is a biological problem or not, since nobody knows what
45 the real catch is of this species, because everybody is looking
46 at their backyard and not looking at the stock as a whole?

47
48 **GRACIELA GARCIA-MOLINER:** The biology, per se, in terms of it's

1 a fast-growing species and it reproduces -- It didn't seem to
2 have a problem with overfishing, but now the commercial catch --
3
4 **RICHARD APPELDOORN:** It's like talking about herring or menhaden
5 or lobster that way and we haven't hammered those things out.
6
7 **GRACIELA GARCIA-MOLINER:** I am going to quote here people saying
8 that the dolphin are as sardines.
9
10 **RICHARD APPELDOORN:** They managed to fish out the California
11 sardine.
12
13 **SHANNON CALAY:** They had some help from the environment.
14
15 **RICHARD APPELDOORN:** They had some help from the environment.
16
17 **GRACIELA GARCIA-MOLINER:** I don't know how to put it more
18 bluntly, but it was a problem of allocation. It was a matter of
19 misidentification and the council decided not to pursue the
20 matter at that time.
21
22 **RICHARD APPELDOORN:** Twenty years ago.
23
24 **GRACIELA GARCIA-MOLINER:** That's why the council --
25
26 **WALTER KEITHLY:** Twenty years from now, if there's a problem it
27 can be brought up. As Bill mentioned on some other species, we
28 can always add species at a future point in time.
29
30 **RICHARD APPELDOORN:** Yes, but this is our single most important
31 species.
32
33 **WALTER KEITHLY:** Single most is a pretty general statement. In
34 terms of what? Ecologically?
35
36 **RICHARD APPELDOORN:** No, economically. I mean it is, by an
37 order of magnitude, the most harvested species in the
38 recreational fishery.
39
40 **WALTER KEITHLY:** I don't doubt it. It's important, but is there
41 a need to manage it because it's economically important? That
42 doesn't necessarily mean management.
43
44 **BILL ARNOLD:** Read your criterion. It couldn't be more clear.
45
46 **WALTER KEITHLY:** The criteria can be changed.
47
48 **BILL ARNOLD:** No, stop. Don't you dare.

1
2 **TODD GEDAMKE:** I was going to raise that point. This is an
3 argument that we've had four times, every time we've had this
4 discussion. I am not saying one way or the other, but we're
5 just repeating the same argument that we've started with, even
6 with the criteria.
7
8 **RICHARD APPELDOORN:** Is there another place where there is a
9 species of this much importance that is not managed?
10
11 **WALTER KEITHLY:** Menhaden in the Gulf.
12
13 **RICHARD APPELDOORN:** There are no regulations on menhaden at
14 all?
15
16 **GRACIELA GARCIA-MOLINER:** Because I believe due to environmental
17 issues. Is there an environmental reason for not managing or is
18 there --
19
20 **WALTER KEITHLY:** You can't overfish it.
21
22 **RICHARD APPELDOORN:** They managed to take a shelf-wide
23 distribution of the Atlantic menhaden and reduced it as far as
24 Chesapeake Bay.
25
26 **WALTER KEITHLY:** You asked for an example and I gave you an
27 example.
28
29 **RICHARD APPELDOORN:** I am just saying how can you say it can't
30 be overfished? It may not be overfished and I am not arguing
31 that.
32
33 **SHANNON CALAY:** I am not on your SSC, but I tend to be
34 sympathetic to the argument that this is a good candidate for
35 regional management, because it is a very widespread
36 distribution and it's unlikely, in my mind, that fishing this
37 stock in the U.S. Caribbean would result in overfishing of the
38 species or the stock as a whole, even though your catches are
39 quite large.
40
41 **RICHARD APPELDOORN:** As I said, it would be more whatever is
42 happening in the South Atlantic, because their catch is much
43 higher.
44
45 **SHANNON CALAY:** Right. It's a more relevant area for the
46 population size, but a regional management scheme, you might
47 have some ability to say whether the stock was likely to be
48 overfished or not and you wouldn't really know that from the

1 catches in the U.S. Virgin Islands or Puerto Rico.

2
3 **GRACIELA GARCIA-MOLINER:** On the other hand, if I recommend this
4 to the council, the council might decide we've met the criteria
5 and we're going to manage it and they might take the bull by the
6 horns and say it's an allocation problem and this is how we're
7 going to deal with it.

8
9 **SHANNON CALAY:** I think that's their prerogative, to a large
10 extent. There will just be certain stocks for which there is
11 nothing we can do to tell you how likely they might be to be
12 depleted, for example. You might have created a control rule
13 that will enable you to create management advice even if there
14 is no stock assessment information.

15
16 If they want to manage it, I suppose it's their prerogative, but
17 they may have to come up with a rationale other than its
18 likelihood of being depleted and maybe an economic concern.

19
20 **RICHARD APPELDOORN:** All right and so by the criteria we had,
21 dolphin and wahoo would be included, because of their importance
22 to the catch. Those criteria have been accepted and can the
23 council then override it by saying we don't want to manage it or
24 are they just facing a choice of how they want to manage, that
25 is to say regionally or locally?

26
27 **GRACIELA GARCIA-MOLINER:** The management will come in the form
28 of establishing an ACL for the commercial and recreational
29 sector, or both combined, and then implementing management
30 measures if they so see fit to restrict the recreational catch,
31 because of the stakeholders' concerns of the amount of the
32 recreational harvest and the impact that it has on the economic
33 aspect of the commercial fisheries.

34
35 We are going back to economics. This one specifically deals
36 with that issue. Now, the other aspect of this is that if you
37 have the amount of dolphin that you have in the area, how are
38 dolphin, per se, impacting the other fisheries in terms of what
39 they eat and when they are juveniles or they are adults, et
40 cetera, during the time that they are here.

41
42 **WALTER KEITHLY:** The recommendation seems to be keep them in,
43 but you asked for recommendations and I gave you my
44 recommendation and so if anybody feels differently, just move
45 on.

46
47 **JOE KIMMEL:** What if we state that due to their extremely high
48 importance to commercial and recreational fisheries that the

1 Caribbean Council engage the other councils to initiate regional
2 management? The South Atlantic Council already has an FMP and
3 so why couldn't you just say the Caribbean Fishery Management
4 ask the Gulf Council to initiate regional management? I mean
5 that's the only other council, right?
6

7 **GRACIELA GARCIA-MOLINER:** Well, we could go back to the South
8 Atlantic and say, okay, let's revisit the issue of the three
9 councils and actually --
10

11 **WALTER KEITHLY:** A multi-council management plan.
12

13 **GRACIELA GARCIA-MOLINER:** It will have to go further than that,
14 because dolphin are expanding to the north and they are being
15 harvested more east and so think about it and other councils
16 could be all the way to New England. I don't know if the South
17 Atlantic has initiated any conversations with the Mid-Atlantic
18 and the New England Councils.
19

20 **JOE KIMMEL:** I think they have.
21

22 **GRACIELA GARCIA-MOLINER:** If they have, then it would have to be
23 a --
24

25 **JOE KIMMEL:** I think the South Atlantic Council accepts
26 responsibility for management of dolphin along the Atlantic
27 coast and they do the same thing for mackerel, where mackerel
28 extend beyond their normal range for cutoffs.
29

30 **GRACIELA GARCIA-MOLINER:** But the ACL then applies to everyone
31 also and if it's closed in the South Atlantic, it's closed all
32 the way to New England.
33

34 **JOE KIMMEL:** (The comment is not audible on the recording.)
35

36 **GRACIELA GARCIA-MOLINER:** It would have to be in the Gulf,
37 because it's not part of the South Atlantic FMP and here, it
38 would be Pan Caribbean, because we would have to look down
39 throughout the region. In that case --
40

41 **SHANNON CALAY:** It has to do with what mechanism.
42

43 **GRACIELA GARCIA-MOLINER:** WECAFC, for example, might be one.
44

45 **SHANNON CALAY:** You need a regional fishery management
46 organization.
47

48 **GRACIELA GARCIA-MOLINER:** That takes on another issue, because

1 it goes into the international arena, which has been done for
2 other species. We need a recommendation to include not only the
3 other councils, but to actually look into the international
4 mechanisms in the Caribbean.

5
6 **SHANNON CALAY:** In general, for all of your stocks that are
7 found Pan Caribbean, a regional management organization is
8 really the appropriate mechanism. That doesn't exist right now.
9

10 **RICHARD APPELDOORN:** The most appropriate that doesn't want to
11 deal with this would be ICCAT.

12
13 **SHANNON CALAY:** ICCAT right, for the pelagics. They do have
14 many of these species included in what they call the small tuna
15 species. It's just that right now we don't formally assess
16 them.

17
18 **JOE KIMMEL:** How do you get a species like dolphin into the HMS
19 management?

20
21 **SHANNON CALAY:** You would have to -- I suppose you would have to
22 petition ICCAT through the ICCAT commissioners, because ICCAT
23 manages the highly migratory tuna-like species in the Atlantic
24 and there is a working group that is meant to provide
25 information about the small tunas, but right now there aren't
26 that many countries that report them and so there are many
27 countries that catch them and not many countries report them and
28 so it really limits our ability to conduct any kind of
29 quantitative assessment.

30
31 **KEN STUMP:** I don't think there is an organization that can
32 manage it, because we don't have the data, because so many of
33 the Caribbean countries are just not collecting it.

34
35 **SHANNON CALAY:** Right. Exactly.

36
37 **JOHN HOENIG:** Do we know that dolphin and wahoo are migratory?

38
39 **SHANNON CALAY:** I don't know enough about --

40
41 **RICHARD APPELDOORN:** Dolphin, absolutely. Yes, we know and yes,
42 they are.

43
44 **JOHN HOENIG:** Based on tagging?

45
46 **RICHARD APPELDOORN:** Tagging and genetics.

47
48 **JOHN HOENIG:** What is the migratory pattern?

1
2 **RICHARD APPELDOORN:** It's only been the stock that's coming off
3 of the South Atlantic that's been heavily tagged and then
4 there's been a small tagging program in Puerto Rico. Basically
5 tags from the South Atlantic have been caught in Puerto Rico and
6 the ones that have light-sensitive tags, they just go all the
7 way north around the Atlantic and come back to Puerto Rico.
8
9 There is a northern route where they will run along the north
10 side of Puerto Rico and Hispaniola and Cuba and back into either
11 the South Atlantic or the Bahamas and there is a southern route
12 that goes along the --
13
14 **JOHN HOENIG:** That's dolphin, you said?
15
16 **RICHARD APPELDOORN:** Yes.
17
18 **MIKE LARKIN:** There's been fish that went from the Bahamas all
19 the way to it looks like New Jersey in forty-five days, over a
20 thousand miles.
21
22 **JOE KIMMEL:** Is that a paper you've got there?
23
24 **MIKE LARKIN:** It's a website, the dolphin research -- I just
25 googled it while you guys were talking.
26
27 **GRACIELA GARCIA-MOLINER:** I can make you the presenter.
28
29 **TODD GEDAMKE:** We can all agree they do move all over.
30
31 **RICHARD APPELDOORN:** This is one fish and I don't know if you
32 can see it, but it just goes all the way around. It's not the
33 only fish that has that record.
34
35 **SHANNON CALAY:** All of these stocks are all included in the
36 ICCAT small tunas, wahoo, dolphinfish, the mackerels, little
37 tunny, cero, bonito, blackfin. My perception is that because
38 there are so many member nations in ICCAT that are not going to
39 report these landings that it would really be good if we get
40 some traction for the WECAFC.
41
42 **GRACIELA GARCIA-MOLINER:** That would be the first step.
43
44 **SHANNON CALAY:** Then we get ICCAT to allow WECAFC to manage
45 these in this area. I don't know how far we are from that
46 approach. It was discussed just recently.
47
48 **RICHARD APPELDOORN:** The genetics showed that there's some

1 reason for differentiation.

2

3 **SHANNON CALAY:** Are we even allowed to manage these if they're
4 under the management of ICCAT?

5

6 **GRACIELA GARCIA-MOLINER:** They are not managed by ICCAT, because
7 I already asked the HMS people and what they told me was that
8 they have information, but they are not managed by them and so
9 they are basically -- I don't know how many times I've got to
10 repeat it, but this is -- Specifically for Puerto Rico, it's an
11 economic allocation and one more thing I'm going to say is that
12 the council has been asking for compatible regulations from the
13 state in other areas and so this might be the other way around,
14 the state asking for compatible regulations in the EEZ. The
15 council has to deal with that. I am not defending one way or
16 another, but I am just keeping you informed of the issue and the
17 way that it has come up to the council.

18

19 In terms of what Shannon was saying regarding the international
20 management of species and the council has moved the queen conch
21 and the Nassau grouper and the spiny lobster and so there are a
22 number of regulations that are compatible throughout the area.
23 Dolphin has been an interest of many of the island nations for a
24 very long time and this might be a good opportunity to make it
25 go that route.

26

27 **RICHARD APPELDOORN:** I would certainly would agree with Walter
28 that we don't have any demonstrated information that suggests
29 that there is a problem with dolphin, but I think there ought to
30 be somebody looking at this from a regional approach and not
31 just everybody's back door. That's not our purpose here.

32

33 If you're talking about the council initiating something with
34 FAO and looking at the way you're doing conch and lobster, for
35 example, that might -- Those are species, especially conch, that
36 have been demonstrated to be vulnerable and overfished in many
37 areas and it got itself into CITES and wahoo, or even more,
38 dolphin, are nowhere in that ballpark and so I'm not sure you
39 want to make an effort in those species, but it might be a good
40 idea at least to take the information available and communicate
41 it through the regions and see what people want to do.

42

43 **GRACIELA GARCIA-MOLINER:** So FAO and WECAFC and other kinds of
44 regional mechanisms to fishery management.

45

46 **BILL ARNOLD:** So the message is if everybody doesn't manage it,
47 we're not going to either?

48

1 **JOE KIMMEL:** Something like that.
2
3 **BILL ARNOLD:** That's what I thought and I just wanted to make
4 sure it was clear.
5
6 **RICHARD APPELDOORN:** This is not something we could have an
7 ecosystem component species, because it's landed so heavily?
8
9 **BILL ARNOLD:** Sure you can.
10
11 **RICHARD APPELDOORN:** I thought they were not landed or not
12 landed significantly or sporadically or something like that.
13 I'm not sure a major species would --
14
15 **BILL ARNOLD:** I don't know this final rule is going to come out.
16 You can recommend anything you want, obviously.
17
18 **WALTER KEITHLY:** For the sake of managing, just to manage.
19
20 **BILL ARNOLD:** The sake of managing just to manage?
21
22 **WALTER KEITHLY:** Saying if no one else can manage it that we
23 shouldn't manage it.
24
25 **BILL ARNOLD:** Are you sending a message that if you guys aren't
26 going to quit slaughtering it that neither are we? It's like
27 saying, look, we are going to manage this species and we suggest
28 you guys do the same, because they are in desperate need of
29 management, because they've been pounded throughout the entire
30 circumference of the Atlantic Ocean.
31
32 **WALTER KEITHLY:** First of all, you don't know if they're being
33 pounded. You don't know what the population is.
34
35 **BILL ARNOLD:** They're not being pounded. They're being totally
36 --
37
38 **WALTER KEITHLY:** I guess you and I have a different philosophy
39 when it comes to management.
40
41 **BILL ARNOLD:** This calls to my mind the passenger pigeon.
42
43 **WALTER KEITHLY:** If it gets to that stage that it can be added,
44 I will second it.
45
46 **RICHARD APPELDOORN:** No, if it's to the stage of the passenger
47 pigeon, it's too late.
48

1 **BILL ARNOLD:** The bottom line is you set a criteria to determine
2 who should be managed and this species fit well within those
3 criteria.

4
5 **RICHARD APPELDOORN:** Right and that's the point I was -- I mean
6 I would almost like to see this saying that -- Instead of saying
7 taking it off the list, do it slightly different and say it
8 needs to be managed by a recommendation that goes this route and
9 not that route, this route being regional. They can decide
10 whether they do it or not. This is where it was coming back to
11 the question if we put those criteria in place and we agreed
12 with those criteria and so the importance has put them on that
13 list and can the council say yes, but?

14
15 **BILL ARNOLD:** They have said yes, but to several species. They
16 said yes, but to sea cucumbers. Sea cucumbers didn't meet the
17 criteria and they added them by a motion and so it can be done.
18 If they can add them by a motion, it seems to me they can remove
19 them by a motion. Only Maria is higher than the council. The
20 council can do whatever they want to do, under the constraints
21 of Magnuson-Stevens.

22
23 **RICHARD APPELDOORN:** This is not something that -- This all has
24 to go through Commerce and they're going to say, wait a minute,
25 you overrode scientific advice from the council.

26
27 **BILL ARNOLD:** If I was reviewing it, I would say what are you
28 talking about? This thing is the number one caught species and
29 one of your criteria is the top ten species and are you nuts?
30 I'm not going to let you take this out. It's the most heavily
31 caught species in the entire U.S. Caribbean.

32
33 **KEN STUMP:** Mr. Chairman, I don't really have a dog in this
34 fight, but I know that the Regional Administrator had said to
35 the council on a number of occasions that this is an important
36 issue to address, because it's such a significant amount of
37 fishing catch. I think that in terms of getting some handle on
38 the recreational fishers in this region that you really don't
39 have a very good idea of what they're doing, except maybe in
40 Puerto Rico.

41
42 This is a step in the direction of trying to apply some level of
43 management to that very significant fishery, which, at least in
44 Puerto Rico, we know, based on the MRIP data, is at least half
45 as large as the commercial fishery.

46
47 **GRACIELA GARCIA-MOLINER:** In the Virgin Islands, they have had
48 dolphinfish since ninety-sixty-something on the forms and this

1 is one of those species that has been valued to being on the
2 commercial catch report since the 1960s, probably because
3 understanding the seasonality of it takes away from putting
4 effort into something else and going towards a resource that is
5 passing by.

6
7 In this case, it's one that is significant in the three islands
8 and it's been adopted by the three island DAP recommendations to
9 be included for federal management.

10
11 **RICHARD APPELDOORN:** Trying to, at least for dolphinfish and
12 wahoo, if you look at that language, let's just move forward
13 with a -- I hate to say it, but a vote, but let's get the sense
14 of the SSC. How many would like to make this a recommendation?

15
16 **WALTER KEITHLY:** Are you talking about what's on the board?

17
18 **RICHARD APPELDOORN:** This is just dealing with these two species
19 now. If you're in favor, raise your hand.

20
21 **TODD GEDAMKE:** This is for all of them?

22
23 **RICHARD APPELDOORN:** This is for dolphin and wahoo for all three
24 areas.

25
26 **TODD GEDAMKE:** The commonwealth already has a regulation in
27 place and that applies to all three?

28
29 **GRACIELA GARCIA-MOLINER:** Do you want me to change that?

30
31 **TODD GEDAMKE:** If we have this preliminary vote just feeling the
32 room, we don't need to wordsmith. I am pointing out that you
33 have inconsistencies in what's up on the screen.

34
35 **RICHARD APPELDOORN:** From what I am seeing right now, Walter was
36 the only one who raised his hand. All right. Without making
37 this a recommendation, per se, but, Reni, you're going to be
38 presenting this to the council and I think it would be important
39 for them to hear that we did have this discussion.

40
41 **JORGE GARCIA-SAIS:** Okay.

42
43 **RICHARD APPELDOORN:** So they're at least aware of the issues.

44
45 **JORGE GARCIA-SAIS:** I think that one thing that probably needs a
46 little bit more clarification is the fact that even though the
47 local agencies, meaning DNER, has a regulation upon mahi-mahi,
48 dolphinfish, it is only restricted to the recreational side.

1
2 **GRACIELA GARCIA-MOLINER:** And only in Puerto Rico.
3
4 **JORGE GARCIA-SAIS:** And only in Puerto Rico. So I mean the fact
5 that the commercial fisheries on dolphinfish is an essentially
6 an open fishery, certainly that has implications in terms of
7 what the fishery can become. You know I mean from the levels of
8 efforts that are now to an uncertain amount of effort in the
9 future, who knows? That's what I consider that. At least it
10 should be on the list for now.
11
12 **RICHARD APPELDOORN:** All right and just to extend the discussion
13 longer, and not on the dolphin, but I don't know enough about
14 little tunny and blackfin. I don't know anything about those
15 two species, but cero and king mackerel, on the other hand, we
16 also don't know much about, but they seem to be much more
17 coastal than the other two species, but the mackerels are
18 definitely important and the two tunas are important to the
19 recreational, very important to the recreational catch.
20
21 I don't know how we would want to consider the recommendations
22 for those, but I would tend to think that they're slightly
23 different and I don't know whether we want to -- They're not
24 included with St. Thomas or St. Croix.
25
26 **VANCE VICENTE:** Richard, is there any area that it's especially
27 important for the reproduction of dolphin, like any area where
28 they spawn or --
29
30 **RICHARD APPELDOORN:** No, they seem to spawn their entire cycle
31 around.
32
33 **JORGE GARCIA-SAIS:** One more question and if somebody knows the
34 answer, but I really don't. The fact that the fishery of Puerto
35 Rico removes a minor component or a minor fraction of the total
36 dolphinfish population, how small is that? I mean it's a small
37 percentage, but how small? Is it 5 percent or 10 percent?
38
39 **RICHARD APPELDOORN:** Who was looking at the landings from the
40 states? What was the recreational landing, four-million or
41 something like that?
42
43 **MIKE LARKIN:** From the South Atlantic? It starts at five-
44 million or something like that.
45
46 **RICHARD APPELDOORN:** We're like 500,000, I think, for -- Well,
47 probably 600,000 if you combine recreational and the --
48

1 **JORGE GARCIA-SAIS:** It was what?
2
3 **VANCE VICENTE:** 600,000 he says for Puerto Rico.
4
5 **RICHARD APPELDOORN:** Versus four-million.
6
7 **MIKE LARKIN:** In the South Atlantic, yes.
8
9 **RICHARD APPELDOORN:** That's just Puerto Rico and I don't know
10 about the Virgin Islands. I think the recreational catch is
11 500,000 or something.
12
13 **JORGE GARCIA-SAIS:** 15 percent.
14
15 **RICHARD APPELDOORN:** So add probably another 2 percent, 200,000,
16 for the commercial catch.
17
18 **TODD GEDAMKE:** Are you comparing the reported landings times the
19 unknown, plus the South Atlantic, which is the only -- There are
20 thousands of miles of area in between and so if 15 is way, way
21 beyond your upper limit or, if when you start adding everything
22 else, you're down at 1, 2, or 3 percent, at most, you added just
23 the ballpark estimates for the Bahamas and all those other
24 things and --
25
26 **JORGE GARCIA-SAIS:** Which are not included in those four-
27 million.
28
29 **MIKE LARKIN:** The four-million is strictly Florida east coast to
30 North Carolina.
31
32 **RICHARD APPELDOORN:** So, by the same token, if you were saying
33 that Puerto Rico was down to what percent?
34
35 **TODD GEDAMKE:** I was just saying that you're dividing out
36 fifteen and --
37
38 **RICHARD APPELDOORN:** I understand and so what's your guess, that
39 it might be diluted down to what?
40
41 **TODD GEDAMKE:** Less than 5.
42
43 **RICHARD APPELDOORN:** What does that say about how much of the
44 South Atlantic catch is actually coming from the rest of the
45 region now, because you're diluting it by other stuff that's not
46 South Atlantic and saying that if there's a double of what's
47 happening in Cuba and Hispaniola and the Bahamas, now you're up
48 to 1.8 or two-million. That's like saying a third of the catch

1 is not coming from the South Atlantic and what are they doing
2 with that?
3
4 **TODD GEDAMKE:** I am not going to stand on any my numbers.
5
6 **RICHARD APPELDOORN:** I understand that. I am just saying is the
7 more you dilute the Puerto Rico impact, the more you're saying
8 that, from the South Atlantic point of view, their fishery is
9 being heavily impacted by someplace else and they're ignoring
10 that. It's all the more argument for a regional --
11
12 **TODD GEDAMKE:** Absolutely. I think we all agree. We all agree
13 on the basic concepts here, absolutely. They move everywhere
14 and the average catch -- Basically we're all in agreement. It's
15 just can we tell other councils to do these things and can we
16 tell ICCAT to do these things? Our decision is just either
17 leave it as it is or to follow the recommendation and kick it.
18
19 **JORGE GARCIA-SAIS:** On the same token, I mean you can't ask for
20 regional management if we don't manage it ourselves.
21
22 **KEVIN MCCARTHY:** Also, the Gulf doesn't manage it either, Gulf
23 of Mexico dolphin, but --
24
25 **SHANNON CALAY:** They don't.
26
27 **WALTER KEITHLY:** Some states have regulations of recreational
28 catches. I guess they thought it was sufficient for the states
29 to do --
30
31 **RICHARD APPELDOORN:** That might be an allocation issue relative
32 to the commercial catch and who knows?
33
34 **VANCE VICENTE:** We don't manage it, but I remember Graciela
35 saying, several meetings ago and we were discussing exactly the
36 same topic, that there were good numerical records from the
37 recreational. Maybe those numbers could be used to determine if
38 there has been any trend in the landings of all of these pelagic
39 species that we're talking about and we never did it.
40
41 **GRACIELA GARCIA-MOLINER:** No, but we could request the
42 information.
43
44 **VANCE VICENTE:** But the information is there?
45
46 **GRACIELA GARCIA-MOLINER:** It should be, because they do have
47 dolphinfish tournaments.
48

1 **SHANNON CALAY:** I guess the problem becomes how do you interpret
2 that information, because lacking context about whether it's an
3 abundant signal you're looking at or a change in fishing
4 operations or effort, there is no way to know what your
5 management action ought to be.

6
7 **VANCE VICENTE:** No, but you do have an idea of the catch per
8 unit effort. You know the size of the boat and you know how
9 many lines are there and, in fact, you know the type of line
10 that they use and all that is in the record. That's the way
11 they give prizes out.

12
13 **TODD GEDAMKE:** Vance, this is a perfect time period to refute
14 that, because right now everyone is talking -- I mean people
15 have come up to me saying we need size limits on dolphin this
16 year and we're not catching dolphin this year. Why? Because
17 the sargassum weed is everywhere.

18
19 They are bringing the small ones in and they're can't troll and
20 so their catchability has gone down. You know the amount of
21 line and you know the hook and you know exactly how many hours
22 they're out there, which is the same as five years ago, but what
23 is your catch rate going to be now compared to then? Your catch
24 rate now is going to be way lower and is that necessarily a
25 decline in the population? No, it's a decline in the change in
26 the environment or the conditions.

27
28 **VANCE VICENTE:** That's true for all of our landings data.
29 Changes in sea surface temperature and changes in the thermal
30 line and I think we should get those numbers and look at them
31 and and discuss them, because they are out there and we've been
32 talking about this for the last five or six years or maybe more
33 and still we don't do anything.

34
35 **SHANNON CALAY:** I don't disagree that we should collect the data
36 and that the information should be examined.

37
38 **GRACIELA GARCIA-MOLINER:** While they're looking at that, let me
39 just say something about the cero and the king mackerel. They
40 have size limits in Puerto Rico.

41
42 **KEVIN MCCARTHY:** They have minimum sizes and was that not one of
43 the criterion?

44
45 **RICHARD APPELDOORN:** They had to be federal.

46
47 **KEVIN MCCARTHY:** It had to be federal existing management?
48 Okay.

1
2 **GRACIELA GARCIA-MOLINER:** Yes and we didn't include any of the
3 local species.
4
5 **KEVIN MCCARTHY:** So that's a local minimum size.
6
7 **GRACIELA GARCIA-MOLINER:** Based on the size at maturity.
8
9 **VANCE VICENTE:** Another thing that also influences the catch
10 that we have to mention is Puerto Rico's buoys out there. The
11 fishermen are using them. They check that buoy and they know
12 the depth of the current and what direction and changes and they
13 will learn to give consideration to a given area that they know
14 is hot when such conditions are met and so there may be some
15 differences before and after in the fisheries out there. Plus
16 we have all this information historically.
17
18 **RICHARD APPELDOORN:** We now have FADs out there, too.
19
20 **JORGE GARCIA-SAIS:** What about the data for the Dominican
21 Republic? Are those included in that? Now that you say that,
22 the fish aggregating devices in the Dominican Republic, they are
23 catching fish like -- I mean they are in those areas like never
24 before in the history of the island. There has been almost wars
25 for the territories around those FADs.
26
27 I wonder, do we know -- I mean is the Dominican Republic data,
28 fisheries data, incorporated into this four-million or whatever
29 or not really?
30
31 **RICHARD APPELDOORN:** No and the reason for the management seemed
32 to be to basically maintain the species as a recreational,
33 predominantly recreational, species.
34
35 **JORGE GARCIA-SAIS:** It was. At some point it was, but now it's
36 going to be less and less. The commercial catch has been
37 relatively higher.
38
39 **RICHARD APPELDOORN:** Not in the South Atlantic, because they
40 have capped that with the ACL. That's why they closed it at the
41 end of June.
42
43 **JORGE GARCIA-SAIS:** Okay. Until when? June to when?
44
45 **RICHARD APPELDOORN:** I assume until the end of this month. That
46 is for the whole east coast?
47
48 **KEVIN MCCARTHY:** That I'm not sure about. At the very least

1 it's from the Virginia/North Carolina border south. It may -- I
2 don't know what sort of arrangements they've got with the
3 councils farther north.
4
5 **MIKE LARKIN:** Kevin, are you talking about dolphin?
6
7 **KEVIN MCCARTHY:** Dolphin.
8
9 **MIKE LARKIN:** Actually, dolphin, that one would be from Maine to
10 the east coast of Florida. Dolphin and wahoo in the South
11 Atlantic are unique ones, where we actually -- We do it also for
12 mackerel and cobia, but for those two stocks, we manage from --
13
14 **KEVIN MCCARTHY:** So they closed it down for the commercial
15 dolphin throughout the --
16
17 **MIKE LARKIN:** Let me follow it up for commercial. I think it's
18 the same, for the whole eastern seaboard.
19
20 **RICHARD APPELDOORN:** So the guys north get screwed if they show
21 up later.
22
23 **KEVIN MCCARTHY:** Yes, true, which is why the South Atlantic is
24 discussing that next week, increasing the ACL.
25
26 **JORGE GARCIA-SAIS:** Why would they do that?
27
28 **KEVIN MCCARTHY:** Why would they choose to --
29
30 **JORGE GARCIA-SAIS:** Is it still being overfished?
31
32 **KEVIN MCCARTHY:** No, I don't think it's overfished or
33 overfishing. I think it was just they exceeded their ACL and
34 now they're in the process of --
35
36 **RICHARD APPELDOORN:** The ACL was set low so it wouldn't threaten
37 the recreational fishery.
38
39 **KEVIN MCCARTHY:** They are reconsidering it this week to increase
40 the ACL, but let me double check on the commercial.
41
42 **RICHARD APPELDOORN:** That's why here the recreational catch is
43 set low, so it doesn't threaten the commercial fishery, on the
44 presumption that even though they're not supposed to sell the
45 stuff it gets into the market.
46
47 **JORGE GARCIA-SAIS:** So is this another allocation thing, but the
48 reverse?

1
2 **RICHARD APPELDOORN:** Well, we're done talking about dolphin and
3 wahoo and so are we talking about the mackerel issues? One of
4 them is clearly a Pan Caribbean or Pan Atlantic species and I
5 don't know what the movements are for the other species. They
6 could be moving around much less and, therefore, is there an
7 alternate management recommendation that the council could
8 consider or are we saying, hey, these things are probably
9 somewhat more local in their movements and therefore what we're
10 doing has a greater impact on them?

11
12 From my point of view, I don't know. I can tell you at least
13 for the mackerels, those are important and for the recreational
14 catches, the tunas seem to be the same way. They meet all the
15 criteria and that's why they're on the list.

16
17 **JORGE GARCIA-SAIS:** I wouldn't take them off.

18
19 **RICHARD APPELDOORN:** I think that's my feeling. Does anybody
20 want to -- I would certainly suggest that there ought to be some
21 tagging going on and then get that in the research
22 recommendations, some genetic work or something.

23
24 **JOE KIMMEL:** By the way, the South Atlantic Council -- I just
25 looked at their dolphin/wahoo plan and the FMP are to manage
26 dolphin and wahoo off the Atlantic states, Maine through the
27 east coast of Florida. That's for dolphin and wahoo.

28
29 **RICHARD APPELDOORN:** Where does the east coast start, the Dry
30 Tortugas?

31
32 **KEVIN MCCARTHY:** It depends on what the species is, but,
33 generally speaking, if you were standing on U.S. 1 down in the
34 Keys, after the Dry Tortugas and south and east, because the
35 fish know where that line is. Generally speaking, that's where
36 it is. There are some exceptions. Like the mackerels, the line
37 shifts around at different times of the year. It's a real
38 complicated mess, but I think for dolphin it's likely to be that
39 line.

40
41 **RICHARD APPELDOORN:** If anybody else has anything else to say,
42 please. If you don't, we're going to Next Steps in Developing
43 Island-Based Management. Who does the next steps?

44
45 **GRACIELA GARCIA-MOLINER:** We have to listen to the cluster
46 analysis first.

47
48 **RICHARD APPELDOORN:** I would like to know what the next steps

1 are.

2
3 **GRACIELA GARCIA-MOLINER:** Action 2 and Action 3 are the next
4 steps. The next steps in developing the island-based FMPs are
5 to do Action 2 and Action 3. Action 2 is the clustering. You
6 have looked at the list of species and now they are not going to
7 fall into the FMUs that we had before.

8
9 **RICHARD APPELDOORN:** I understand that. Action 2 is the FMUs?

10
11 **GRACIELA GARCIA-MOLINER:** Yes.

12
13 **RICHARD APPELDOORN:** What is Action 3?

14
15 **GRACIELA GARCIA-MOLINER:** The reference points, but you are not
16 going to do that until we review the SEDAR-46.

17
18 **RICHARD APPELDOORN:** Where is Ken? He had brought up an issue
19 when I said I wanted to defer to we were done with the species
20 list.

21
22 **GRACIELA GARCIA-MOLINER:** His recommendation was to review the
23 list previously, but should we wait for him to tell us more
24 about that?

25
26 **RICHARD APPELDOORN:** Is this something we just need to remind
27 the council or do we need a formal recommendation?

28
29 **GRACIELA GARCIA-MOLINER:** The way things are set up right now,
30 your information is going to be limited by the forms that they
31 use from the reporting of the commercial and the recreational
32 catches. That's your limiting factor. Right now, they have a
33 write-in, but most of the write-ins are just -- It doesn't
34 necessarily specify the species.

35
36 For reviewing the list, then you either have to make changes to
37 the form now to comply with the list that you have already or go
38 the fishery-independent way to recommend surveys or that list
39 can be enhanced.

40
41 **RICHARD APPELDOORN:** I don't think that's the same thing as what
42 Ken was talking about. Ken was talking about do we agree with
43 the list that's going to be recommended to the council and
44 that's separate from do we want to -- Making a recommendation
45 saying this should be a dynamic list that as new information
46 comes to light that species could be added or removed as
47 appropriate.

48

1 That's a very different question from are we collecting the data
2 we need, given this species list and the other complexes and
3 what species should actually be on the form. If we're going to
4 go down and say these are FMUs and these are indicator species
5 for each of the islands, all those indicator species better be
6 on the form. Is that kind of what you were talking about?

7
8 **GRACIELA GARCIA-MOLINER:** I think the two things go hand-in-
9 hand, because they are defined by the form that you have and
10 that's going to be it, unless --

11
12 **RICHARD APPELDOORN:** No, that will have to change. If there is
13 an agreement these are the indicator species, these species
14 better be on -- Where are we getting the data for them to do the
15 assessments?

16
17 **SHANNON CALAY:** I agree. It all has to go hand-in-hand. Your
18 FMP, once you decide your species for your FMP, has to go hand-
19 in-hand with data collection and stock assessment objectives,
20 eventually.

21
22 **RICHARD APPELDOORN:** Right and so I guess I would just say I
23 would like to make the recommendation to the council that we
24 feel that this is a dynamic list and as information becomes
25 available that species could be added or removed from the list
26 accordingly. Therefore, the list should come up for review at
27 some periodic -- A periodic review.

28
29 **GRACIELA GARCIA-MOLINER:** Is that they way you want it?

30
31 **BILL ARNOLD:** I hope not.

32
33 **RICHARD APPELDOORN:** No, that's not what I want. We're not
34 talking about as the list develops. We're talking about --

35
36 **BILL ARNOLD:** After it's in place.

37
38 **RICHARD APPELDOORN:** We're talking about after today.

39
40 **BILL ARNOLD:** You mean so the council should periodically review
41 this draft list in the coming months or after the FMPs are in
42 place?

43
44 **RICHARD APPELDOORN:** After the FMPs are in place. Do we need a
45 second recommendation to them that -- You know we've just gone
46 through a list and said okay, but we've already said that's
47 going to change, perhaps, relative to what we see as we look at
48 these other actions, where we see something that says -- For

1 example, there is no way ever we're going to have information on
2 this species and should it still be there in some way?

3
4 I mean I'm not sure how what we're about to hear is going to
5 affect things in terms of whether a species would drop out or
6 not. It would certainly affect what species we think are going
7 to be indicators for other species and we may find that there is
8 species that don't have other indicators that we're not
9 currently collecting data and we're not harvesting enough to
10 ever think we're going to get data.

11
12 I think Ken's -- We can't ask them when he comes back in, but
13 that's what I understood and I agree with it, that the species
14 list that we're looking at, or any other aspect, actually, of a
15 fishery management plan is a fluid document and all of it should
16 be reviewed periodically.

17
18 **TODD GEDAMKE:** With that being said, Bill, can you explain what
19 this actually means in practice? Let's say it goes into the FMP
20 and then we have had this recommendation to review this and what
21 if the -- I mean what does that mean? Is there actually a
22 practical way or some sort of framework adjustment that's in
23 there that would allow this list to be dynamic, as we've put in
24 writing?

25
26 **BILL ARNOLD:** The council and NMFS are obligated to review,
27 maintain, and update their fishery management plans constantly,
28 as needed. This is a standing obligation and you don't need to
29 give them a recommendation of it. If a species needs to be
30 added for management, then it needs to be added for management.
31 I mean you could make this recommendation to them, but it pretty
32 much goes without saying.

33
34 **TODD GEDAMKE:** So this recommendation doesn't really mean
35 anything, because, in the end, you have to --

36
37 **BILL ARNOLD:** It already exists.

38
39 **TODD GEDAMKE:** But there's nothing like a framework adjustment
40 that would allow us to do a change without going through a full
41 amendment?

42
43 **BILL ARNOLD:** You can include as a framework measure -- You know
44 we've got ACLs and OFLs in there and you could say list of
45 species to be managed and then you could do a regulatory
46 amendment instead of a plan amendment to add or subtract a
47 species. You might say a fifth of your time or a quarter of
48 your time in getting that done. I am not saying you shouldn't

1 do it, but I am saying that a regulatory amendment takes a
2 little less time. Not a lot less time than a plan amendment to
3 get through, but the obligation to monitor your plans and update
4 them as needed is standing and constant.

5
6 That's what we do. That's what all of these amendments we ever
7 consider are. They are revisions to our fishery management
8 plans to adapt to changing conditions and adding species and
9 subtracting species are a reflection of changing conditions.

10
11 **GRACIELA GARCIA-MOLINER:** Okay and so what the --

12
13 **BILL ARNOLD:** Sorry, Graciela, but, again, I am not opposed to
14 the recommendation at all.

15
16 **GRACIELA GARCIA-MOLINER:** In practical terms, at the end of the
17 ACL amendment, there is a framework approach and it says you can
18 do all of these things by a regulatory amendment rather than
19 having to do a whole bunch, like a year worth, of information
20 and debate. I mean we do it, because we did it for the
21 parrotfish, for example, for the size limit. We tried to do the
22 ABT and so that can be in that framework action.

23
24 **TODD GEDAMKE:** All I'm trying to get across is that once you
25 have the management plan in place with the list of species that
26 are in it, no matter what we say and recommend, it's not going
27 to change the fact that you have to change the whole management
28 plan.

29
30 **BILL ARNOLD:** You have to amend it.

31
32 **TODD GEDAMKE:** We're making ourselves feel better by saying
33 maybe we can revisit this and we'll change it, but we can't
34 without what is a long process.

35
36 **BILL ARNOLD:** It's not going to be longer than this meeting.

37
38 **TODD GEDAMKE:** I love your humor, because when I think about
39 this, this is all --

40
41 **BILL ARNOLD:** We amend these things all the time. The
42 amendments ideally would take less time. ABT we worked on for
43 about three years and got nothing out of that and so -- But we
44 also removed the snails from the conch component and we removed
45 seagrasses and that took maybe nine months, but we removed four
46 species of seagrass.

47
48 The recommendation you would want to make is we want a framework

1 measure that addresses adding and removing species from
2 management as deemed appropriate by the council or something
3 along those lines, so you have, in addition to your OFL and ACL,
4 et cetera, et cetera, you have a framework action that captures
5 changing the species composition of the FMP.

6
7 **RICHARD APPELDOORN:** What would the wording of that be?

8
9 **TODD GEDAMKE:** That's exactly it and thank you, Bill.

10
11 **BILL ARNOLD:** Basically some extraction of the thousands of
12 words I just used.

13
14 **RICHARD APPELDOORN:** Could you give her something?

15
16 **BILL ARNOLD:** The council include a framework measure to address
17 changes in the species composition of the FMP. I think that's a
18 great idea. Just the FMP, because you will have this included
19 in each individual FMP.

20
21 **JORGE GARCIA-SAIS:** Bill, now explain what you mean exactly by
22 "framework measure".

23
24 **BILL ARNOLD:** Framework measures are measures that allow us to
25 do things in a more expedited, theoretically more expedited,
26 manner, via a regulatory amendment instead of a full plan
27 amendment. Less analysis is required and fewer components to
28 the amendment are required to get it noticed.

29
30 **JORGE GARCIA-SAIS:** Are there some parameter indicators or --

31
32 **BILL ARNOLD:** For whatever reason the council deems appropriate
33 to add or remove a species.

34
35 **KEN STUMP:** A framework measure gives you the ability to move an
36 action faster, but it's based on a previous action which
37 analyzed the overall approach and that's what you're doing now.
38 You will have that as a basis and any framework that follow on
39 that can be done in a shorter fashion without as much analysis.

40
41 **JORGE GARCIA-SAIS:** So give an example.

42
43 **KEN STUMP:** It's done all over the country in other councils.
44 Framework actions are routine and they're established through
45 the environmental impact statement or whatever major action
46 you've got and you can framework off of that and it's frequently
47 done to establish ACLs.

1 **BILL ARNOLD:** To change ACLs.

2
3 **RICHARD APPELDOORN:** We are going to break and then we'll go
4 through the clustering.

5
6 (Whereupon, a brief recess was taken.)

7
8 **(There is a break in the audio recording.)**

9
10 **PRESENTATION OF CLUSTERING ANALYSIS**

11
12 **MIKE LARKIN:** What species were caught with what and so if a
13 species was caught on a trip, I give it a one and if it was not
14 caught, I give it a zero and so I will give you a quick example
15 here.

16
17 Trip 1 had Species A was caught and it was zero landings of
18 Species B and Species C also had landings and so you can see
19 one, zero, one. Then Trip 2 had zero Species A and then it had
20 landings of Species B and Species C. Essentially, it kind of
21 standardizes everything just to look at what is caught it with
22 what. Do you have a question?

23
24 **RICHARD APPELDOORN:** Species absence or presence/absence was --
25 First of all, is that decision based on the impact you're
26 talking about in terms of weights or was it just because the
27 data was so mess that presence or absence was --

28
29 **MIKE LARKIN:** I just thought this was so preliminary and we can
30 always change it, but I just thought that was a way to
31 standardize everything.

32
33 **RICHARD APPELDOORN:** It gives species equal weight.

34
35 **MIKE LARKIN:** Yes, exactly. I used a hierarchal cluster method,
36 meaning I didn't do -- I just wanted to assign I want five
37 clusters or I want ten and so, instead, I used a method where
38 every data starts with a cluster and then it starts comparing
39 distance between them and then decides should this one be
40 clustered with this one and so forth and I have a little more
41 detail here in the next slide.

42
43 I used the average cluster method and I have a little diagram
44 over here. In this case, you have A and B in a cluster and C is
45 being considered whether it should be included in the cluster
46 and you use the minimum method and you look at the minimum
47 distance between a point inside a cluster and a point outside,
48 70 to 0.5, which I think is also called the nearest neighbor

1 method. It depends on what software we're using.
2
3 The maximum method, which I think is called the farthest
4 neighbor method, in this case, except it's the farthest distance
5 between a point within the cluster, which would be D , and a
6 point outside the cluster, which would be 0.625.
7
8 I chose to use the average method, which actually takes into
9 account the average distance between the points in the cluster
10 relative to the point being considered outside the cluster. You
11 can see in this simple example here that you get 0.5625.
12
13 If we use a determined number of clusters, because if you keep
14 clustering, eventually everything will fall into the same
15 cluster, but when do you stop? I used the cubic clustering
16 criterion and also Hotelling's pseudo T-squared statistic and I
17 just want to point out these are just two that I chose that I
18 found in the literature and if anyone knows of any other ways, I
19 am certainly open to suggestions, but that cubic clustering
20 criterion, which I will call CCC, essentially looks for uniform
21 distribution within clusters.
22
23 Once you add a data point in and it's not uniform, then it will
24 say, okay, don't include that in the cluster and stop here.
25 Then the Hotelling's pseudo T-squared statistic, essentially
26 that one looks at the means between clusters and so as you add
27 more clusters -- For every time you create a cluster, it gives
28 you a mean comparing between clusters and so essentially it
29 gives you this table output, this statistic, and it's tough,
30 because the way it works is you're looking for relative changes.
31
32 The greater difference there are between the means, the greater
33 that statistic will be, but relative is to be subjective and so
34 that's why I'm open to ways to find the number of clusters,
35 because like if it goes -- For example, if it goes from like
36 four and four and then six and then eight, six is greater than
37 four, but eight is greater than four also and so should you stop
38 here or stop there?
39
40 I guess I'm saying that it's not clear, like there's a clear P
41 value or anything like that. These methods just define the
42 clusters, but especially that T squared statistic, I am
43 concerned that it could have some subjectivity in terms of
44 deciding the number of clusters.
45
46 **RICHARD APPELDOORN:** A question. Your diagram, I am not sure
47 how it relates to your numbers. You're talking about should C
48 be included with A and B or should it be something else?

1
2 **MIKE LARKIN:** Yes.
3
4 **RICHARD APPELDOORN:** So you come up with your average method and
5 that's the number you're going to use to decide whether it's in
6 or out?
7
8 **MIKE LARKIN:** No and then once it has a cluster -- For example,
9 comparing between clusters and trying to figure it all out here,
10 it will compare the mean value for the T squared statistic, the
11 mean between clusters. I think that's more an issue of what
12 that -- Once you have your clusters and then it calculates the
13 mean with them and then if you add something else, does it --
14 When you add something else to the cluster, how much does it
15 change that mean, that difference, between these clusters?
16
17 When you add something else, I guess the theory is it could be
18 very different in the other ones and so it could make the value
19 spike. Then when you see that spike, that's where you make the
20 cutoff. So, okay, the spike is that six clusters and so,
21 therefore, I shouldn't have six and I should go back to five
22 clusters and so it's kind of confusing and I could show you some
23 of the output summary.
24
25 Anyway, if we keep moving here to St. Thomas/St. John results,
26 what I am going to show you is St. Thomas/St. John cluster
27 analysis and then St. Croix and then Puerto Rico. To start off
28 with St. Thomas/St. John, from 2012 through 2014, there was over
29 6,000 commercial trips that harvested at least one of those
30 relevant species and so one of those, in this case that forty-
31 nine species list.
32
33 The CCC method gave me -- It said I should stick with eight
34 clusters and the T squared statistic has it at ten clusters and
35 so another way to look at the average distance between clusters
36 you see on the X value there, but anyway, what you're looking at
37 here is -- Another thing to keep in mind is our commercial
38 trips, with all these trips, some species are caught more than
39 others and so like spiny lobster or spotlight parrotfish or red
40 hind, these are caught quite frequently in St. Thomas and St.
41 John and you can really isolate the differences between them.
42
43 Then if you look at down at the bottom here, this cluster is
44 kind of really hard to see, because if you look at St.
45 Thomas/St. John, when I'm looking at that time period of 2012 to
46 2014, there really weren't that many trips that caught these
47 species and so you end with a data-poor issue.
48

1 For example, black snapper and jolthead porgy and this cluster
2 down here is hard to tell the differences, because there's not a
3 whole lot of trips that really caught those species.

4

5 **KEVIN MCCARTHY:** I am sorry for coming in late, but these are
6 just ones and zeroes, right? It's just presence or absence and
7 it's not amount of --

8

9 **MIKE LARKIN:** You're right. I was looking at what was caught on
10 a trip and zero if it was not caught and I gave it a one if it
11 was caught, regardless of whether it was one pound or 1,000
12 pounds on a trip.

13

14 **GRACIELA GARCIA-MOLINER:** This is for all gears and all --

15

16 **MIKE LARKIN:** Correct. It's for each individual trip and so you
17 kind of see it's incorporating here, meaning for each individual
18 trip, what was caught with what? You assume if they're on the
19 same trip that they could be caught with the same gear or there
20 could be multiple gears on a trip and that's another issue I
21 talk about at the end.

22

23 **KEVIN MCCARTHY:** Some of this is, at least for black snapper,
24 it's not on the form and so that's -- You are maybe going to --

25

26 **MIKE LARKIN:** Give me two more slides. This is all preliminary.
27 This next slide here, I am just trying to --

28

29 **JOHN HOENIG:** Looking at it, you've got ten main groups and do
30 they make sense? Like is one of them fish traps and the other
31 some other gear or something like that, or one is shallower than
32 the other?

33

34 **MIKE LARKIN:** That's a good point. You know fishermen have to
35 go through this much more than I would, but I would you would
36 get close clustering of the dolphin and wahoo. They're kind of
37 close to each other and spiny lobster looks like, for the most
38 part, they're by themselves and therefore, I'm guessing that
39 would reflect a lot of the trips that they're caught are just
40 focusing on spiny lobster, but that's, I guess, more a point for
41 the fishermen to -- They could comment on this much better and I
42 did also, following on the next slide here --

43

44 **RICHARD APPELDOORN:** I have some questions just about what I'm
45 looking at. What determines the order that a species are listed
46 in?

47

48 **MIKE LARKIN:** What determines the order from top to bottom?

1
2 **RICHARD APPELDOORN:** Yes.
3
4 **MIKE LARKIN:** Just I think counting the distance between them.
5
6 **RICHARD APPELDOORN:** So I'm looking at hogfish and that lines
7 goes up and it looks like it joins the one for --
8
9 **MIKE LARKIN:** Blackfin snapper? Is that what you're talking
10 about?
11
12 **RICHARD APPELDOORN:** No, it looks like it joins the one for blue
13 runner and blackfin snapper is coming across and doing I don't
14 know what. It's almost connecting with the next group with
15 queen angel.
16
17 **MIKE LARKIN:** Yes, blackfin snapper, hogfish, and queen
18 angelfish are forming a cluster there and then in the next one
19 it goes over and joins with blue runner. So what was your
20 question?
21
22 **RICHARD APPELDOORN:** That seems to have some discontinuity
23 there, as to say why isn't hogfish on top of --
24
25 **BILL ARNOLD:** No lines cross, Richard.
26
27 **MIKE LARKIN:** It may look that way. It looks like it's parallel
28 with the cluster, but --
29
30 **RICHARD APPELDOORN:** What is it doing?
31
32 **MIKE LARKIN:** You have blackfin snapper, hogfish, and queen
33 angelfish kind of merging together and even the queen angelfish
34 is already merging with the other clusters.
35
36 **RICHARD APPELDOORN:** So why is blackfin snapper someplace else?
37
38 **MIKE LARKIN:** Why does it have its own line? We see a tiny
39 little difference there and we see the --
40
41 **RICHARD APPELDOORN:** I don't know what that tiny little -- I
42 don't know what the lines are really doing, but I would like to
43 see if there is something that's not --
44
45 **KEVIN MCCARTHY:** What it's doing is basically for each fish it's
46 saying what's the most similar fish to it and so it comes up
47 with a whole bunch of pairs and then it says, okay, for each
48 pair, what is it closest to?

1
2 **RICHARD APPELDOORN:** Right and so it looks like -- I don't see
3 why blue runner and hogfish aren't pairing to each other. Is
4 that not right or --
5
6 **MIKE LARKIN:** It's occurring with the previous cluster of
7 blackfin snapper and hogfish and all of the other and it's kind
8 of being added on there.
9
10 **WALTER KEITHLY:** This is the closest fish in terms of what's
11 likely to be caught on a trip?
12
13 **MIKE LARKIN:** On a trip, yes.
14
15 **WALTER KEITHLY:** Okay. I have a bit more general question. The
16 purpose of this analysis is simply trying to put these species
17 into groups? Then I heard something about indicator species.
18 Are we going to try to pick an indicator species from each
19 group, even though life histories within a group may be totally
20 different?
21
22 **MIKE LARKIN:** I would rather you guys, at this point -- I am
23 focused more on methods than whether it's a -- I mean are you
24 saying --
25
26 **BILL ARNOLD:** Walter, it's not for Mike to come in here and tell
27 you guys how to do this. He's going to provide one method to do
28 this, but you guys may group species, but you don't have to
29 group species. You could use this to group some species and say
30 we don't want to group other species and we want to keep them as
31 individual species.
32
33 The SSC has complete range of motion to decide how they want to
34 or not want to group species and so what we are going to want to
35 get out of this meeting is some guidance on the alternatives
36 that we should include in Action 2 addressing how to group
37 species in the complexes.
38
39 One alternative that will be included in that action is we don't
40 group species in the complexes and every species is included and
41 is treated individually. That doesn't mean that's the
42 alternative you have to recommend or push forward or the council
43 has to accept or anything, but that's one potential alternative.
44
45 Another alternative may be use clustering and Hotelling's T-2 at
46 0.10 and do those ten clusters that Mike is going to show you.
47 Another alternative may be we want to pull out queen conch,
48 lobster, Nassau grouper and goliath grouper and whatever else

1 and we want to put them in as individual species and then we're
2 going to take our cluster analysis with a Hotelling's T-2 of
3 0.10 or whatever you guys want to do. This is what we're
4 looking to you for, to say with the remainder of the species we
5 want to apply this clustering analysis.

6
7 You may say, because we're going to get to the -- I sent you
8 that paper on network analysis just as an example. That's a
9 whole different approach to grouping species. You may not like
10 that at all and not want to include it as an alternative or you
11 may like it and want to include it as an alternative.

12
13 **WALTER KEITHLY:** Thank you. Basically, to shorten your
14 discussion a little bit, we're looking at this as one possible
15 example on how we may want to group species, if we decide to
16 group species.

17
18 **BILL ARNOLD:** Yes. It's one of many possible methods.

19
20 **RICHARD APPELDOORN:** If you look at the current FMUs, we have
21 Snapper Unit 1 and Snapper Unit 2 and there are reasons why
22 those are --

23
24 **WALTER KEITHLY:** Yes and I just was wondering. It's a very
25 simple question for the purpose of this review.

26
27 **MIKE LARKIN:** I just want to point out this. This is St. Thomas
28 and St. John. There is forty-nine species on that list, but I
29 am only showing you here much less than that, because for eleven
30 of those species there were no commercial landings for the year
31 period I looked at of 2012, 2013, and 2014.

32
33 I can provide that. I have that if you guys need it, but
34 there's two obvious ones, Nassau grouper and goliath grouper,
35 but also like black grouper. Something else to keep in mind is
36 I'm trying to cluster them, but there is no data and there's no
37 trips with any landings for the species and they're obviously
38 not going to be included in this clustering.

39
40 This is just following that Hotelling for defining ten clusters.
41 An issue which I'm going to point out here is when you get down
42 to cluster ten, it really goes into the data-poor issue. These
43 guys all get grouped in the same cluster and it just really is a
44 function of it's that many trips during the time period I looked
45 at that caught many of those fish and so you end up with this
46 funky cluster at the bottom here because there's not much
47 information to really separate them into the other clusters.

48

1 **KEVIN MCCARTHY:** This question sort of came up earlier. This is
2 all one gear?
3
4 **MIKE LARKIN:** I just looked at -- I don't know if you were here,
5 but I just looked at individual trips and so in a way it's
6 incorporating gear, because on a trip what was caught with what
7 and so you're assuming on a trip they were using the same gear.
8
9 **VANCE VICENTE:** I mean the cluster of dolphin and wahoo and --
10
11 **KEVIN MCCARTHY:** There is two things that could happen. One,
12 they could have fished multiple gears on a trip. That happens
13 and then the other thing is you could have trip one that goes
14 out with traps and catches this suite of species and trip two
15 goes out, hook and line, and catches part of that suite of
16 species and some other stuff and so now it's a mess. It's just
17 something to think about.
18
19 **MIKE LARKIN:** You're right.
20
21 **KEVIN MCCARTHY:** It's a little simpler in St. Thomas, because so
22 much of the fishery is trip.
23
24 **MIKE LARKIN:** Right now, under this, it's primary gear, but I
25 believe also I can get the primary, second, and third. Let's
26 say the primary gear is traps and the second gear is hook and
27 line and I really can't isolate that these fish on a trip were
28 caught with traps. I guess you could say lobster, obviously.
29
30 **KEVIN MCCARTHY:** I mean I didn't want to get off on a whole
31 tangent here, but we can chat about this, but it's just
32 something to think about.
33
34 **TODD GEDAMKE:** What you've got up there, yellowtail snapper,
35 that's one that's a perfect example, just when you're looking at
36 the data, because most of it is hook and line with one or two
37 species captured. Then the trap fishery will pick up one and so
38 doing presence and absence, you're making those the same.
39 Yellowtail would be a good one to look at.
40
41 **MIKE LARKIN:** I've got you. Then this brings up an issue that
42 you brought up, Kevin. The forty-nine species that are on that
43 list -- In the USVI, the catch report form actually has a trap
44 one and I believe I have a gear one, but only twenty-six of
45 those species on the form. They're listed right there, like red
46 hind.
47
48 Then the other ones, they could be added as write-in and are

1 they? That's certainly something that I am concerned about. I
2 mean if you're in St. Thomas/St. John and you catch a hogfish,
3 do you write it in in the write-in? Do the fishermen do that
4 100 percent of the time or 10 percent of the time?

5
6 **KEVIN MCCARTHY:** I don't have the answer, but I would not want
7 to stake my analysis on those data. It's an unknown.

8
9 **MIKE LARKIN:** Yes and so --

10
11 **TODD GEDAMKE:** Mike, in St. Thomas, the forms don't only list
12 twenty-six. They list what, seven, for the trap fishery? It's
13 twenty-six for the other one.

14
15 **MIKE LARKIN:** I've got you, but I looked at both lists and kind
16 of looked at the species.

17
18 **GRACIELA GARCIA-MOLINER:** What he means is that you've gone
19 through the list and you've gone through the form and out of the
20 forty-nine, only twenty-six show up in the catch reports and are
21 listed there and the other ones are not listed.

22
23 **MIKE LARKIN:** Like hogfish are not there. They can write them
24 in, but do they write them in? Like red hind are on the list,
25 just to give you an example. So twenty-six out of those forty-
26 nine and so 47 percent of the species are not listed and they
27 could be write-in species.

28
29 I did an earlier cluster analysis with all the -- I just looked
30 at all those forty-nine species. Now what I'm going to show you
31 here is if I isolated and only look at those twenty-six -- If I
32 only look at the twenty-six that are listed on the form and then
33 do a new cluster analysis -- There is twenty-six of them and if
34 you do count here, you will see I only have twenty-five species
35 listed, because pluma, Calamus pennatula, is listed on the form,
36 but there were no landings in St. Thomas/St. John for that
37 period of 2013 to 2014.

38
39 You can see I do get much more distance. You can see the
40 cluster is much more clearly being defined here and so of those
41 twenty-five species.

42
43 Now I will move on to St. Croix. It's similar. It's the same
44 time period and a similar number of records, over 9,000
45 commercial trips harvesting one of the relevant species. This
46 one being either the CCC method with seven clusters and the T
47 squared statistics is nine.

48

1 This is all the species of all those -- In this case, it's
2 forty-five species in St. Croix though and so I filtered them
3 out and looked for the same method. What is caught with what?
4 It's that presence/absence format.

5
6 In this case, there is eleven species missing from that list of
7 forty-five species, because there were no landings for St. Croix
8 during that 2012 to 2014 time period.

9
10 **GRACIELA GARCIA-MOLINER:** No landings or they are write-ins and
11 --

12
13 **MIKE LARKIN:** Even if they were write-in, there were no
14 landings, period. Even if they were a write-in, I would still
15 have it and so for that time period of 2012 to 2014, those
16 eleven species, which I can supply that list if you want, but,
17 anyway, there were no landings of those. No trips where they
18 were landed.

19
20 This is kind of the same thing. It goes back to the same issue,
21 the catch form. In this case, only twenty-five of those species
22 that are on that list for St. Croix are included on the catch
23 form and so 45 percent of those species that are chosen for
24 management are not listed on the catch form and they could be
25 added as write-in species.

26
27 Anyway, I did the same thing. I isolated those twenty-five
28 species that are listed on the catch form and did, again -- In
29 this case, you will see twenty-four are listed out of twenty-
30 five, because graysby, there were none in that 2012 to 2014.
31 That's why they are not listed, because there were no trips that
32 landed them in St. Croix during that time period. Again, when
33 you isolate the other stuff, you get better groupings of the
34 species.

35
36 For Puerto Rico, it was a complete different ballgame. Over the
37 same time period of 2012 to 2014, there were over 100,000
38 commercial trips that harvested at least one of those relevant
39 species.

40
41 You can see that St. Croix had about 9,000 and St. Thomas about
42 9,000 and now you're looking at over 100,000 commercial trips
43 for the same time period, 2012 to 2014. The CCC had six
44 clusters and the T squared statistic gave me seven clusters and
45 this for those species there and so they had a much larger
46 number of species.

47
48 Sixty-six were listed, but actually thirty-two of them there

1 were no landings from 2012 through 2014 and they were some of
2 the ones that you guys talked about today, like the manta ray,
3 sting ray, or eagle ray. Those were not listed in the dataset
4 when I looked at it for the time period that I chose and so
5 thirty-two of them are not listed here and that's why it looks
6 kind of short, even though there were sixty-six species chosen
7 for Puerto Rico.

8
9 Now, the same issue that Kevin brought up, again. In Puerto
10 Rico, only twenty-five of those species are listed on the catch
11 form and so twenty-five out of sixty-six and so the other
12 species chosen for management are not listed on the catch form.

13
14 Again, I isolated it and so I filtered it only for those fish
15 that are on the catch form and I get a more clear description of
16 the clustering.

17
18 You guys are probably going to ask me this and what about other
19 data for clustering? I started putting in a matrix of the von
20 Bertalanffy parameters and the T_{max} and L_{max} and length at 50
21 percent maturity and the weight/length parameters, the A and B,
22 and M, natural mortality.

23
24 This is from -- For example, if you look at sixty-six species
25 for Puerto Rico and I was able to work with the Science Center
26 staff to get their list and did some literature review of my
27 own, as well as I know Maria did some work as well.

28
29 You would like to know, for all those sixty-six species, what
30 are the values for all these parameters? The issues are these
31 two bullets here. 90 percent of the parameters came from other
32 areas and so in a perfect world, I would love to have all these
33 parameters for Puerto Rico and all of them for fish sampled in
34 Puerto Rico and sampled in St. Thomas/St. John and sampled in
35 St. Croix, but, unfortunately, that's not the case.

36
37 90 percent of the parameters came from other areas, primarily
38 from Florida and from Brazil and other studies in the Bahamas.
39 That's one issue and, for example, are the parrotfish age and
40 growth parameters in Florida the same as here? The size at
41 maturity, is it the same as here? That's something we could
42 argue for days on, I think, but I don't have a lot in using it
43 from such faraway distances.

44
45 Another issue is some of them I just don't have the information.
46 I don't have all the -- For example, von Bertalanffy parameters,
47 for 30 percent of them we don't know the parameters for -- Like
48 rainbow parrotfish and princess parrotfish and French angelfish,

1 what are the von Bertalanffy parameters, as well as the Tmax,
2 the Lmax, and maturity? These data gaps -- I wish I had it for
3 every species and that would be very straightforward cluster
4 analysis.

5
6 **SHANNON CALAY:** For the SEDAR-46 assessment, we did a literature
7 review, which I provided to Graciela. It contains all of the
8 known currently that we've derived from the literature for the
9 species in the Caribbean. Some of your species for which you're
10 lacking information may be in there.

11
12 **MIKE LARKIN:** I got that and --

13
14 **SHANNON CALAY:** Some of them are still missing.

15
16 **MIKE LARKIN:** Yes and that was my primary data source right
17 there, to go through that as well as earlier SEDARs. I still --
18 I am at sixty-six species and I mean that was very, very
19 helpful. You know that, but as well as for like rainbow
20 parrotfish and French angelfish -- There still were a lot of
21 gaps in there.

22
23 **KEVIN MCCARTHY:** So if there's a hole, the analysis crashes?

24
25 **MIKE LARKIN:** I didn't run it. I could run it for only -- I
26 just thought it would take out a big chunk of species.

27
28 **KEVIN MCCARTHY:** I could see a situation, and I don't know if it
29 would work, but I could see a situation where you have a dozen
30 parameters of various kinds to go along with your
31 presence/absence stuff. Maybe for some species they've got all
32 of them and maybe for other species they've got eight out of
33 twelve. Maybe that would be -- I don't know anything about this
34 analysis and so maybe it wouldn't work at all, but maybe that
35 would be okay, because it doesn't need to know everything about
36 every species. I don't know the answer, but it's something to
37 think about. Do you disagree?

38
39 **MIKE LARKIN:** Four of my data gaps are huge and it's not like
40 I've got ten out of twelve. I maybe have two out of twelve
41 parameters and so I mean I could certainly run it.

42
43 **KEVIN MCCARTHY:** Right, but there may be some other -- This
44 group may come up with some other things to think about to add
45 in to the analysis that may be a little more fully -- More fully
46 populate the matrix.

47
48 **MIKE LARKIN:** Yes and I've got you and I'm certainly all ears to

1 that. Another thing I looked at was what do I have for all the
2 sixty-six species and what is one -- Or in this case, two
3 parameters I can get for all of them.
4

5 I looked at the depth range and minimum and maximum, in meters,
6 which primarily came from FishBase, as well as examples in the
7 literature. There is a lot of -- I don't know how to say this,
8 but there is some issues with and so, for example, if you go to
9 FishBase and you look up *Coryphaena hippurus* dolphin, it says
10 that the minimum depth is one meter and the maximum is eighty-
11 five meters.
12

13 I am guessing if it's one meter they are also considering the
14 larvae in one meter as well as I would think that they live in
15 waters much deeper than eighty-five meters.
16

17 **RICHARD APPELDOORN:** It's the importance of the fact that they
18 are usually near the surface, but they occasionally dive down to
19 eighty-five meters.
20

21 **MIKE LARKIN:** But then you look at the pompano dolphin and it
22 says like one to 500 meters and so I guess they dive deep.
23 Anyway, just this was my example and I don't want to get too
24 caught up in this, but just trying to look at if I do have
25 statistics for every single species.
26

27 I did the CCC and it gave me nine clusters and the T squared
28 statistical gave me eight, but we really get some weird
29 clustering. I apologize because it's hard to see there, but
30 these are all the sixty-six Puerto Rico species and using only
31 the minimum and maximum depth range.
32

33 **TODD GEDAMKE:** I am just trying to wrap my head around it and so
34 now that you've added depth in and Walter rephrased the first
35 cluster as the cluster is having similar probability of capture
36 and how would you phrase this now that depth is in there?
37

38 **MIKE LARKIN:** Similar depth. Similar minimum and maximum depth.
39

40 **BILL ARNOLD:** This is only depth, right?
41

42 **MIKE LARKIN:** Yes, this is only depth right now and you end up
43 with some weird stuff, because I think -- Like Nassau grouper I
44 think are clustered with dolphin, because if you go to FishBase,
45 they occur at similar depth ranges. This is just based on those
46 two parameters of minimum depth and maximum depth.
47

48 **JOHN HOENIG:** It's not true probability of capture, because

1 probability of capture will obviously depend upon the gear type.
2
3 **MIKE LARKIN:** Probability of caught with each other I guess you
4 could say.
5
6 **JOHN HOENIG:** It's association. These are what are being caught
7 together and depth could be explaining more.
8
9 **BILL ARNOLD:** These are what are being reported together.
10
11 **MIKE LARKIN:** In that case, yes, they are, but this is just
12 depth. This is just for the sake of example, because I had
13 minimum and maximum.
14
15 **JOHN HOENIG:** But you can run depth with being caught together.
16
17 **MIKE LARKIN:** Meaning added to the trip stuff?
18
19 **JOHN HOENIG:** Yes.
20
21 **MIKE LARKIN:** Yes, I could. I guess I will have to think about
22 how to weight it, because I mean for Puerto Rico, you have over
23 100,000 trips, which would just drown out any of -- I can figure
24 that out later, but you're saying incorporate it with the
25 commercial catch?
26
27 **KEVIN MCCARTHY:** If you start splitting things out by gear, you
28 are not going to have 100,000 anymore and I think gear is going
29 to be an important thing to consider to parse out your data.
30
31 **MIKE LARKIN:** Are you suggesting running it only for -- You mean
32 if I only filter it out and run it only for --
33
34 **KEVIN MCCARTHY:** Only run it on traps and only run it on
35 whatever your big gears are.
36
37 **BILL ARNOLD:** Kevin, how you would handle those outcomes? You
38 may get a different clustering, and you probably will, for each
39 gear and so are we going to start managing by gear?
40
41 **KEVIN MCCARTHY:** I am not suggesting that, but what I'm
42 suggesting is if you don't account for gear that your results
43 are going to be confusing.
44
45 **BILL ARNOLD:** I am not disagreeing with you, but go in the
46 reverse direction. Say we want to manage groups that make ACL
47 sense, so that if we shut down a fishery due to an ACL overage,
48 that management action makes sense and you can kind of work

1 back. You certainly have to keep this in mind. That's going to
2 be a key responsibility of the SSC, is to put together coherent
3 complexes that can be managed in a coherent manner.

4
5 **KEVIN MCCARTHY:** I agree. However, the initial stated goal of
6 this presentation was give me some suggestions to improve it and
7 so why don't we do that and see what happens. How about that?

8
9 **BILL ARNOLD:** I am fine with it, but I just wanted to make sure
10 we had the how to apply this.

11
12 **KEVIN MCCARTHY:** All of what you say is legitimate, but let's
13 see where the analysis leads it.

14
15 **WALTER KEITHLY:** I think that's a key question there. What is
16 the purpose of the matrix to begin with, which is what I was
17 trying to get at. The purpose is to manage it for ACLs.

18
19 **BILL ARNOLD:** Actually, the purpose is to create an effective
20 manner of management and so we don't need to group spiny
21 lobster. We've got tons of data and tons of landings and we can
22 manage spiny lobster.

23
24 When you get back into blackfin snapper, what the heck are you
25 going to do? You might have 300 pounds of landings and are you
26 going to manage them and set their ACLs based on that, or do
27 they belong in a larger group, where they all get managed
28 together? If so, what does that group look like?

29
30 **RICHARD APPELDOORN:** So we could conceivably have something that
31 says here is the St. Thomas trap fishery and they are all
32 grouped together, because they're all going after the same
33 things and whatnot, and we have an indicator species, perhaps,
34 for that and when that species goes over, the entire fishery
35 gets shut down.

36
37 **BILL ARNOLD:** That's what happens pretty much anyway. When
38 you're talking about Snapper Unit 2, it's not cardinal snapper
39 that's dragging the landings over the ACL. It is queen snapper,
40 but the cardinal snapper harvest gets shut down when the queen
41 snapper harvest gets shut down. That's common with most of
42 these complexes, especially in the USVI, where we just have
43 grouper and grouper is probably driven by red hind, but they all
44 get closed when red hind forces the landings -- I mean they all
45 contribute, but as the fishermen have told us, probably 90
46 percent of those landings are red hind.

47
48 There is going to be some of that and I don't see how we can get

1 around that, unless you want to manage every species. Then
2 you're going to have species with ACLs that are -- Like we have
3 St. Croix hogfish at eight pounds.

4

5 **MIKE LARKIN:** I will just keep moving on.

6

7 **BILL ARNOLD:** Just one last thing is you've got the -- The SSC
8 has the authority and opportunity to use their expert judgment
9 to guide this. Like I said earlier, if you wanted to say we're
10 pulling lobster and we're pulling queen conch and we are going
11 to do what we've done and manage those separately, you can get
12 them out of there and quit letting them mess with the
13 clustering.

14

15 We're going to pull Nassau and we're going to pull goliath and
16 you can pull whatever you think you can -- You can give whatever
17 guidance you wish to Mike to move this thing forward. You have
18 a lot of authority here, because this is science.

19

20 **WALTER KEITHLY:** I guess I, just looking at the larger picture
21 with the little bit of knowledge that I had, I am concerned
22 about the cluster analysis on a trip basis and I feel like the
23 depth we're not going to quite get, because I know in fact that
24 they will often release catch of queen conch and they catch
25 queen conch and lobster oftentimes on the same trip, yet
26 certainly you would not want to remove those.

27

28 **BILL ARNOLD:** So let's talk about why real quickly, Walter. You
29 could be catching -- You could have an ACL of 200,000 pounds for
30 spiny lobster and queen conch and you catch 190,000 pounds of
31 spiny lobster, which is way over your ACL, but you have hardly
32 even hit your queen conch, but the queen conch gets closed too,
33 even though really the focus should have been on the spiny
34 lobster. That's what you're trying to avoid.

35

36 **WALTER KEITHLY:** That's why I am questioning the use of the
37 cluster analysis at that level, for the purpose of management,
38 or grouping species for management.

39

40 **JOHN HOENIG:** It's important to understand that cluster analysis
41 is meant to be intuitive and not statistically rigorous. It's
42 got a lot of arbitrariness built into it in terms of what's your
43 measure of similarity and how are you going to do your
44 clustering and so on and so it's not like you're proving a
45 hypothesis with P less than 0.05. It's just saying, well, if
46 you assume that similarity means this, you will get these
47 groupings and if you assume similarity means that, you will get
48 these groupings and what it's meant to do is generate some

1 ideas.

2

3 So you say, yes, I knew that stoplight parrotfish and redbtail
4 parrotfish are caught together, but I didn't know that this
5 other one tends to be caught with it, because I don't really
6 know that species all that well and so that makes sense and
7 let's include that into the grouping.

8

9 That's all it's meant to be and it's not meant to be let's do a
10 statistical test to see whether or not this species belongs here
11 or there. It can't take the place of that, because it's
12 primitive and it's just looking at abundance means presence or
13 absence and why does abundance mean presence or abundance?
14 Well, because that's -- Given that, I think it's very useful
15 what you've got and the idea is -- If you do it with five
16 different algorithms, you get five different trees, but you will
17 start to see these fish always come together and why is that?

18

19 It makes sense that if I put a trap out that's what I am going
20 to catch and so if I put a regulation on this species, you know
21 damn well it's going to affect these other species, because
22 they're always caught together. That's what it's trying to get
23 at. It should make sense when you look at it. You said yes,
24 that's what I would have thought or maybe not this species, but
25 then you look at it and you say no, that species doesn't belong
26 in it or we should possibly add this other species. It may not
27 show up in the landings, but I know it's there or something like
28 that. Don't read too much into it. It's meant to be a useful
29 tool and it's not meant to be precise surgery.

30

31 **GRACIELA GARCIA-MOLINER:** In fact, you said something
32 interesting and this is something that the fishers are going to
33 look at and probably be more intuitive about it than we are,
34 because they will see the species that they harvest together in
35 the way that they are used to seeing them, even though we have
36 been trying to separate species by specific information.

37

38 I think that the idea of using gears is going to be interesting,
39 because probably their fisheries are divided like that and so
40 putting the first slides that you have and adding the gear
41 separation, I think that it's going to be very useful.

42

43 **JOHN HOENIG:** I mean you're going to have two different kinds of
44 uses for the groupings. One is to say if we put a regulation on
45 these species, what other species are going to be affected? The
46 other is to say if we put a regulation on this gear, what is it
47 going to do?

48

1 One says which species are caught together and the other says
2 which species are caught in which gear. You want to know both
3 if you want to know the implications of management decisions.
4
5 **RICHARD APPELDOORN:** Could you do a different clustering
6 arrangement here, because the other one is --
7
8 **MIKE LARKIN:** Yes and this one is just that minimum and maximum.
9
10 **RICHARD APPELDOORN:** The way you combined the other one that's
11 giving you that serial manner species of management --
12
13 **MIKE LARKIN:** I did the same exact method, but it's just that
14 this is how it turned out with the different methods. This is
15 just how it formed, but this one I guess I don't have a whole
16 lot of confidence in those.
17
18 **KEVIN MCCARTHY:** I think the other one just didn't end up giving
19 you as clean a group as this one.
20
21 **MIKE LARKIN:** The other one has commercial trips and you could
22 add -- I am thinking like red hind. There is a ton of trips,
23 whereas this one they all have the same number of samples. We
24 have minimum depths and maximum depths for each species and so
25 this one has an equal number of samples for each fish and so the
26 other one is kind of more trips for one species, but very few of
27 another one.
28
29 **RICHARD APPELDOORN:** So the trips don't record the depth?
30
31 **GRACIELA GARCIA-MOLINER:** I was looking for that. They should
32 be included.
33
34 **MIKE LARKIN:** I think they do have a minimum and maximum depth
35 on the trips that I can incorporate too.
36
37 **KEVIN MCCARTHY:** Right, when it's filled out. We can talk about
38 that more too.
39
40 **MIKE LARKIN:** Okay.
41
42 **JORGE GARCIA-SAIS:** Mike, have you tried it working it out with
43 ranked order of abundance of a total catch and see how the
44 clusters came out and if it looks anything like these ones?
45
46 **MIKE LARKIN:** I'm sorry, but --
47
48 **JORGE GARCIA-SAIS:** I mean in terms of like ranked order of

1 abundance and then taking each one as a fraction of the total?

2
3 **MIKE LARKIN:** Okay. You're saying rerunning it with ranking the
4 order of the abundance or of total catch? So meaning if spiny
5 lobster are the most dominant, I would give that a one and if
6 hogfish are the least dominant, give that the lowest value and
7 is that what you're saying?

8
9 **JORGE GARCIA-SAIS:** Yes.

10
11 **MIKE LARKIN:** We can talk about that later too, but I can do
12 that.

13
14 **GRACIELA GARCIA-MOLINER:** Can I ask a question before we go on,
15 because I have to go back all the way to the beginning. There
16 is a list of species that have been selected and there is a
17 different list of species that is in the catch report and so we
18 are seeing that most of what you are looking at is less than 50
19 percent of the total number of species that are in the catch
20 reports.

21
22 They are in the catch reports because it's an agreement between
23 the fishers and the Science Center and the council and everyone
24 else who was involved at the time and they said these are the
25 species that are important for our fisheries, but we don't have
26 them in the list that we're considering for the island-based
27 FMPs and the analysis that is being done here is only on the
28 species that are on the list and that are on the catch reports.

29
30 My question is should we go back to the dataset and run the
31 cluster analysis with the original dataset instead of picking
32 the list of species that have been selected?

33
34 **MIKE LARKIN:** You mean with everything?

35
36 **GRACIELA GARCIA-MOLINER:** Yes, or drop it after a certain -- But
37 we're dropping 50 percent of the information that's in the catch
38 reports. I am thinking that --

39
40 **MIKE LARKIN:** You're saying I'm dropping 50 percent because I'm
41 filtering only for the species on the list?

42
43 **GRACIELA GARCIA-MOLINER:** Yes.

44
45 **MIKE LARKIN:** I am just trying to think out loud. Let's say I
46 would be running it with spotted butterflyfish or with with red
47 hind and we're not going to have an ACL including butterflyfish,
48 right?

1
2 **GRACIELA GARCIA-MOLINER:** No, just to see how they would cluster
3 together from the forms that we have. If it doesn't make any
4 sense because -- I am just saying that looking at the numbers
5 that we're dropping 50 percent of the species that are in the
6 catch reports.
7
8 **TODD GEDAMKE:** Graciela, I already mentioned that to Mike. I
9 thought that running it with the complete set would be
10 important. Gear splitting is an obvious one for me and I think
11 it's key. I mean I think you're absolutely right and my
12 question would be was TIP data considered to do this?
13
14 **MIKE LARKIN:** No, it was only commercial for now and so you're
15 saying take the TIP data?
16
17 **TODD GEDAMKE:** Well, the question you're asking has nothing to
18 do with commercial. It has to do with species association.
19
20 **GRACIELA GARCIA-MOLINER:** Yes, but it's the dataset that we have
21 and you have to say that it's commercial.
22
23 **TODD GEDAMKE:** Well, the TIP is collected from the commercial
24 data.
25
26 **GRACIELA GARCIA-MOLINER:** Also, yes.
27
28 **TODD GEDAMKE:** Yes and you don't have all your caveats for
29 species, but we do have caveats of non-complete trips
30 potentially not being measured, but that would -- Your concern
31 about only having seven on the list or twenty-six would be --
32 You wouldn't have that issue and if somebody juggles that down,
33 your St. Thomas, ninety-something percent of that catch is traps
34 and that only has seven species on that list and so if you're
35 using the commercial reporting from the most recent years in the
36 trap fishery, which is driving that whole analysis in St.
37 Thomas, you are only dealing with seven of those and not the
38 write-ins.
39
40 **MIKE LARKIN:** I've got you.
41
42 **BILL ARNOLD:** Another thing is you're dealing with three
43 separate FMPs here and you don't have to do the same thing in
44 each FMP. For Puerto Rico, you have got species-specific data
45 back to 1984, if not earlier. You could use all of those data.
46 You can use Puerto Rico recreational data combined with
47 commercial data and you can set these things up separately. You
48 pretty much have a free deal on this. This is your one chance.

1 You're rewriting the FMPs and you pretty much have a wide open
2 field here in front of you.

3
4 The USVI is going to be much more difficult, because all we had
5 were those grouper and snapper and parrotfish groups and we
6 didn't have individual species and so you might want to take
7 advantage of what you've got in Puerto Rico and then try
8 different approaches in the USVI, where you might have to bring
9 in a lot more habitat data and a lot more life history data to
10 try to make sensible groupings.

11
12 **RICHARD APPELDOORN:** Bill, is this leading to the potential of
13 having the same FMUs or different FMUs for at least the Puerto
14 Rico commercial versus the recreational?

15
16 **BILL ARNOLD:** That can be done. I am not sure how --

17
18 **RICHARD APPELDOORN:** We have different sectors for -- They have
19 different ACLs.

20
21 **BILL ARNOLD:** Yes, they have different percentages, really, of
22 the total ACL. I mean they are separate ACLs, but they were
23 derived from using kind of a total landings type of approach,
24 but no, that's right and you could set recreational and
25 commercial up completely differently in Puerto Rico if you wish.
26 They are managed separately and you could have different
27 clusters.

28
29 **TODD GEDAMKE:** Mike, also Bill had mentioned pulling lobster or
30 pulling conch and I would make some judgment calls before you
31 get into this and think about what --

32
33 **BILL ARNOLD:** That's what we're looking to the SSC for. Give us
34 guidance on those judgment calls. What about pluma, Nassau, and
35 goliath?

36
37 **TODD GEDAMKE:** In the analysis? I mean you've got no landings
38 and is it going to be informative in what you're looking at? I
39 mean you've got no way to put data in any sort of cluster in
40 there really, or potentially getting an indicator out of it.
41 It's all of those prohibited species issues. We've got no data
42 and we've got no way to do any of the work, unless we go
43 outside.

44
45 **BILL ARNOLD:** Midnight and blue rainbow?

46
47 **TODD GEDAMKE:** You've got no data for it, but you can go back to
48 the TIP data at the beginning of the time series. You can

1 specify or tailor it to the question you're asking within that.
2 If you're looking at the parrotfish complex and you don't really
3 know what you're doing with those three, go back to the early
4 part of the time series and subset it from there and take a look
5 at that.

6
7 A lesson that was learned also, and someone mentioned it here
8 the last time we went through this with the data evaluation, but
9 I think John said is there's an intuitive aspect to this. Be
10 very aware of the fact that when you do get someone that is
11 looking at this that actually has done the fishing, they're
12 going to look at this and go, you've got something that's whacko
13 coming out in there and you're going to really put some serious
14 concern in the science on things and so make sure that you go to
15 the people that are actually really familiar with your trap
16 fishery and places. Use some of your commercial fishermen and
17 bounce some of your preliminary results off of them.

18
19 **BILL ARNOLD:** So the next SSC meeting will be joint, to some
20 degree, with the DAPs. That's what we expect. We want to bring
21 this back to the next SSC meeting with a lot more detail and
22 different approaches and different alternatives established and
23 do just what Todd is saying. Now we get it from these guys and
24 get them to have their influence and then the SSC can say okay,
25 do this and we can bring that to the council and hopefully start
26 developing our public hearing draft with essentially fully
27 fleshed out Actions 2 and 3.

28
29 They don't have to be perfect, because it's still going to
30 public hearings and all that stuff, but hopefully when we come
31 out of that next SSC meeting, we will have good guidance on what
32 these actions and their alternatives are going to look like.

33
34 **MIKE LARKIN:** I have a really quick -- Commercial landings and
35 self-reported are the different caveats here and it is not
36 incorporating life history, because of the data gaps there. It
37 either comes from other areas or we just don't have all the life
38 history information for all the species.

39
40 As we already talked about, they may engage multiple gears on a
41 single trip and different locations emerge, but I am considering
42 filtering -- You know running it for different gears and let's
43 see what the results are.

44
45 **GRACIELA GARCIA-MOLINER:** I don't think that the commercial
46 landing self-reporting is an issue here, because we're just
47 doing presence or absence.

48

1 **MIKE LARKIN:** I think they're --
2
3 **KEVIN MCCARTHY:** That may be an issue. That may be an issue.
4 You know does everything get reported? I mean we don't know.
5 We are in the process of trying to sort that out, but we don't
6 have an answer yet.
7
8 **MIKE LARKIN:** Future work, as well as what you guys gave me here
9 today, but also the TIP data is great idea there, as were the
10 other ones, but a cluster analysis of recreational landings for
11 Puerto Rico -- I need to do that and potentially -- Bill and I
12 were talking about is there any way to incorporate habitat data,
13 some way to quantify it, but that gets a little iffy, because of
14 different life stages and different habitats of the species.
15
16 **GRACIELA GARCIA-MOLINER:** I am going to tell you right now it's
17 going to be for habitat that is less than thirty meters.
18
19 **RICHARD APPELDOORN:** Or you could have habitat between benthic
20 and pelagic and maybe ones that are more pelagic with the shelf,
21 like yellowtail or something like that. Just that grouping
22 alone will get all the pelagic stuff away from all the benthic
23 stuff.
24
25 **TODD GEDAMKE:** You don't need to do habitat to just do that.
26 Take your pelagics and pull your pelagics and --
27
28 **RICHARD APPELDOORN:** That's just saying open ocean habitat
29 versus the benthic. That's the crudest form.
30
31 **TODD GEDAMKE:** My uninformed advice would be very wary of going
32 down that road. That's going to be very complicated.
33
34 **JOHN HOENIG:** If you think about what's the purpose of this, you
35 might have complete biological confidence that a fish that's
36 found on the surface is not a fish found on the bottom and they
37 shouldn't be in the same group except that it's very possible
38 that a fisherman goes out and sets a trap and does some hook and
39 line and comes back with a dolphin and some lobster and you say,
40 but lobsters and dolphin are not in the same habitat, but if
41 they are caught on the same trip, then --
42
43 **RICHARD APPELDOORN:** I think we'll recognize that that's -- If
44 you see them on the same trip, throw it out.
45
46 **JOHN HOENIG:** If you wanted to know what's the --
47
48 **RICHARD APPELDOORN:** If you see it on the same trip for 50

1 percent of them, then you know you have a problem.

2
3 **JOHN HOENIG:** You might have a mixed fishery. The point is if
4 you want to know what's the implication of a regulation on
5 lobsters to somebody who is fishing dolphin, you might think
6 there is no implications, because they are not found in the same
7 habitat, but in fact a fisherman who gets a certain fraction of
8 his income from dolphin and a certain fraction from lobsters
9 might feel a regulation on either species. All the cluster
10 analysis is doing is saying this is similar trips.

11
12 **RICHARD APPELDOORN:** If you do the split and you see lobster
13 showing up on both lists, to look at what's going on. Then you
14 find out what's going on and, like you said, it's exploratory
15 and that's a way to raise a red flag. It's not a way to manage
16 a fishery.

17
18 **JOHN HOENIG:** Yes and what I'm saying is the cluster analysis
19 may not be wrong when it puts lobster and dolphin together if
20 that's how they're caught in trips. From a biological point of
21 view, where you want to know what will a regulation on lobsters
22 do, it won't affect the catch of dolphin, other than the fact
23 that if it puts a fisherman out of work that maybe the lobster
24 regulation killed the dolphin fishery, but from a biological
25 point of view, yes, your intuition, because the cluster analysis
26 is telling you something, but it doesn't meet your needs. It's
27 not that it's wrong, but it's just not meeting your needs.

28
29 **MIKE LARKIN:** I briefly described our analysis -- I'm not very
30 familiar with it, but there is a network analysis, another way
31 to group species. I just wanted to throw that out there as a
32 potential other method.

33
34 **BILL ARNOLD:** Also, that's just a suggestion that there may be
35 other methods and we were kind of looking to the SSC. If you
36 know of other methods, to tell us about them so we can explore
37 them.

38
39 **JOHN HOENIG:** Other methods for?

40
41 **BILL ARNOLD:** For grouping things.

42
43 **WALTER KEITHLY:** I guess my first inclination would be a
44 question of how did you group them previously? What was the
45 rationale we used for the previous grouping?

46
47 **BILL ARNOLD:** That's a very good point, Walter.

48

1 **WALTER KEITHLY:** I assume that's just expert opinion.
2
3 **BILL ARNOLD:** No, it was a cluster analysis done by Nick and who
4 worked with him on that? Was that Andy and Nick?
5
6 **KEVIN MCCARTHY:** That was before my time at NOAA.
7
8 **TODD GEDAMKE:** Jason.
9
10 **BILL ARNOLD:** Jason and Nick? Because I know Nick did the --
11
12 **TODD GEDAMKE:** Nick was brand new and Jason was --
13
14 **WALTER KEITHLY:** Did they break it up into subgroups before they
15 did the cluster analysis?
16
17 **BILL ARNOLD:** I don't remember exactly how they did it, Walter,
18 but one potential alternative is use the exact same method you
19 used for the 2010 or 2005 SFA -- I guess it was the 2010 ACL
20 Amendment.
21
22 **GRACIELA GARCIA-MOLINER:** Do we have to use that -- That was
23 only for the species that were under management at the time and
24 so nothing else was being considered and none of the pelagics or
25 anything else.
26
27 **WALTER KEITHLY:** My point is I suspect that they looked into
28 subgroups of species and then ran the cluster analysis on each
29 group of species, because the groups were perfect in terms of
30 all the big snappers and then it was basically pelagics and so I
31 have to assume that they -- It was some analysis to begin with
32 to break up all the species.
33
34 **BILL ARNOLD:** I don't think they did a complete grouping. I
35 think they did just a few of the subsets of snapper and grouper.
36 They didn't do everything.
37
38 **RICHARD APPELDOORN:** To me, issues that would be important would
39 be family, because there are similarities in the biology of
40 those, and then the next factor would be size, because that also
41 has a lot of impact on your life history and other vulnerability
42 to fishing.
43
44 Depth, and I am not sure minimum or maximum is what you want,
45 but maybe you -- Maybe what the record was saying or the mean or
46 something like that. Then habitat, but I am thinking of that in
47 terms of splitting the pelagics from the benthics and there may
48 be a middle group, like yellowtail, which are benthic, but they

1 spend a lot of time up in the water column feeding, but they are
2 shelf oriented. We might think about what is a middle group
3 between those.

4
5 That's kind of the biology aspect of it and then the gears ought
6 to be -- Depth probably should be depth plus and so it probably
7 should be what's coming from the -- That's what was used to put
8 out a number of the species. These species are all in the same
9 depth range that the deepwater snapper fishery is going after
10 and so they're grouped together and whatnot. The depth ranges
11 of those species are somewhat different, but in terms of how the
12 fishery is hitting them, they come out fairly similar.

13
14 You don't have to have all these connotative von Bertalanffy and
15 stuff like that and there's so much of that that's correlated to
16 family and size to begin with that that captures probably 80
17 percent of what you would be trying to get out of it.

18
19 **BILL ARNOLD:** Richard, do you mean maximum size?

20
21 **RICHARD APPELDOORN:** Yes. Maybe this was maximum reported size.
22 I don't remember, but --

23
24 **JOE KIMMEL:** I have seen papers where people use cluster
25 analysis to develop their groups and what you see is the
26 endpoints and you don't see all the mess that happens before you
27 get to the endpoint, but people things like rotate the
28 clustering around the nodes so that visually the species line up
29 better and they make more sense and it's kind of what John was
30 saying, that it's a technique that --

31
32 **RICHARD APPELDOORN:** You could do a multidimensional scaling.

33
34 **JOE KIMMEL:** Then you could do an ordination analysis, which is
35 a different approach altogether, and then compare what you got
36 from the cluster to the ordination analysis. Ordination is not
37 as -- The clusters are not as well defined, usually, as they are
38 in cluster analysis, but if you get similar clusters in your
39 ordination analysis to what you do in your cluster analysis,
40 then you have a pretty good idea that these groupings really do
41 occur.

42
43 **MIKE LARKIN:** And if you don't?

44
45 **JOE KIMMEL:** If you don't, then you try to -- You cluster until
46 you get results that do.

47
48 **VANCE VICENTE:** I use it in taxonomy and systematic. It's very

1 useful, for this purpose at least. It's a little bit
2 complicated and I still don't have a handle on it, but I can see
3 how it can be useful.

4

5 **BILL ARNOLD:** Which one is that, Vance?

6

7 **VANCE VICENTE:** I was just saying I use cluster analysis for
8 taxonomic and systematic purposes and it works fine and then you
9 establish what level of distance to determine differences and
10 not statically or any probability level, but you can actually
11 separate families in a really nice fashion, but you have to
12 determine what it's the analysis that you're going to use to
13 separate the clusters and with this method, with the T squared,
14 it tells you a cluster, but at different dissimilarity levels.
15 What reliable measure then are we using to determine the
16 cluster? That's my question.

17

18 **BILL ARNOLD:** Some geneticists actually do apply fee value to
19 these things.

20

21 **KEVIN MCCARTHY:** What you would typically do in something like
22 that is you would bootstrap it. You would go through and you
23 would take out one taxonomy and the you would run it again and
24 then you would take out a different one and you would run it
25 again and you would do that a bazillion times and that -- Then
26 you're looking at how often do you get the same clades? That's
27 what they look at in terms of the strength of the analysis when
28 they're doing taxonomic kinds of things.

29

30 **JORGE GARCIA-SAIS:** Is the ultimate goal like establish some
31 management approaches to clusters instead of species? I mean
32 can we get to that level?

33

34 **MIKE LARKIN:** That's your call. That's the SSC's call. Don't
35 look at me.

36

37 **JORGE GARCIA-SAIS:** I am just wondering. I mean if this effort
38 can lead to this or, if not, why are we doing it?

39

40 **JOHN HOENIG:** We are doing it, I think, for a bunch of reasons.
41 One is to know if we consider a regulation on one species that
42 what's it likely to do to other species and to the fisheries for
43 other species. If we can't assess everything, does it make
44 sense to look for an indicator species and would you use the
45 status of spiny lobster stock as an index of what's happening
46 for dolphin and wahoo?

47

48 Probably not, because they're not all that similar, but you

1 might consider one species as an index for a group if it makes
2 sense. There is a bunch of reasons why you might want to look
3 at the structure of the catch and the purpose you have in mind
4 will determine which clusters are appropriate and so it's not a
5 question of feeding it into the computer and the computer said
6 here are some clusters and therefore they must mean something
7 and let's adopt them and then we'll figure out what they mean.
8 That doesn't make good sense at all.

9
10 **BILL ARNOLD:** You are only clustering to solve management
11 problems. If you could keep all of these species separate and
12 effectively manage them individually, that's what you would want
13 to do, but I think we would all agree that that's probably not a
14 valid argument, because of the many species that are going to be
15 included for management for which data are scarce or non-
16 existent.

17
18 You know, ultimately, every species we've considered has some
19 landings in their history or they never would have been in this
20 analysis from the beginning. We wouldn't have included them in
21 the list of species to even be discussed for management. That
22 was our starting point. Somewhere along the line, that species
23 had some landings.

24
25 **RICHARD APPELDOORN:** So in terms of gear, I could see this being
26 run one of two ways and I would like to know what the feeling is
27 in terms of what we're recommending we would like to see done.
28 One is running them across gears and so what species are being
29 targeted by which gears, primarily, together and one would be
30 you run each gear separately to see within the trap fishery what
31 species are falling together and within the diving group what
32 species are falling together, just as ways of giving us
33 information on how to look at the fishery, but I don't think
34 either one of those is going to define groups for us, but it
35 does define the point that John was making that as we look at
36 these things and we're thinking about how to potentially group
37 them, what impacts will that grouping have on the management of
38 the species within those groups.

39
40 **BILL ARNOLD:** I had a request/suggestion. Would it be possible,
41 Richard, for you to set up a very small SSC subcommittee of
42 maybe three people that we could go to with our ideas and
43 suggestions on this and they could provide us some guidance?

44
45 We could have multiple calls, maybe, between now and that late
46 spring meeting, just so Mike and whoever is involved in this
47 isn't operating in a vacuum until we come back to the SSC, just
48 somebody to bounce -- Some component of the SSC to bounce ideas

1 off of.
2
3 **MIKE LARKIN:** I second that.
4
5 **RICHARD APPELDOORN:** Do you want this to ricochet off of hard
6 heads or soft heads?
7
8 **BILL ARNOLD:** People that will do -- Seriously, people who are
9 knowledgeable, like John, and can help. Mike, I don't mean to
10 put words in your mouth, but I have a feeling we're going to
11 need some help.
12
13 **MIKE LARKIN:** No, I agree. I am all for it. I think it's a
14 great idea.
15
16 **SHANNON CALAY:** There are some similar recommendations that are
17 coming out of the SEDAR-46 approach to have more SSC -- I don't
18 know, but maybe electronic communications to establish
19 management frameworks. There are a lot of things we're going to
20 have to think about if these approaches are going to be used for
21 this management advice and so I have a few recommendations too
22 that are similar to what you suggest, Bill.
23
24 **BILL ARNOLD:** That will be for Action 3, the reference points
25 and all that stuff?
26
27 **GRACIELA GARCIA-MOLINER:** I am going to send around the
28 Caribbean evaluation data workshop report from 2009. 2.2 is the
29 stock complexes approach that was used then and the FMUs as they
30 are now. I will send that around. It's Section 2.2.
31
32 **RICHARD APPELDOORN:** You're sending out the whole document and
33 we're looking at Section 2.2 or you're sending us Section 2.2?
34
35 **GRACIELA GARCIA-MOLINER:** I will send the whole document. I was
36 going to pull out that section, but it's taking too long.
37
38 **BILL ARNOLD:** Another thing you can do, just so we put as many
39 ideas out here as possible, but an alternative could be we're
40 going to use -- This works well for Puerto Rico and not so hot
41 for the USVI, but we're going to use the groupings we used in
42 the past for Puerto Rico and so Snapper Unit 2 is going to be
43 queen and cardinal and then the SSC would come in with whatever
44 method they wanted and say here is a new species that we're
45 adding for management and where does it fit into these groups
46 and that's sort of a short approach to this.
47
48 For example, if we're going to end up adding dolphin and wahoo

1 and that group of pelagics, the SSC may just say those are
2 pelagics and we put them all together and here is our new group
3 of pelagics. If we add yellowedge grouper, you say this is the
4 group that already exists that yellowedge grouper belongs in.

5
6 You don't have to do that, but that can be a valid alternative
7 and if the council doesn't choose it as their preferred
8 alternative, but it is something to put out there and, again,
9 that's probably much more appropriate for the Puerto Rico FMP
10 and not such a great idea for the USVI, which I think are going
11 to be more the troublesome islands to deal with on this, but I
12 am just throwing out ideas and it's totally up to you guys to
13 give us guidance on this.

14
15 This may be something you guys want to think about overnight and
16 then come back tomorrow with some additional input, or not. A
17 baseball game is a great way to think about things, and Mike
18 will be right there.

19
20 **JOHN HOENIG:** That's because it's so boring.

21
22 **KEN STUMP:** If you have different groupings and your ACLs are
23 set -- This is, in large part, for setting ACLs and managing and
24 if people are used to the ACLs that they have with the existing
25 complexes, they could look very different under --

26
27 **RICHARD APPELDOORN:** Under what?

28
29 **KEN STUMP:** Under different groupings.

30
31 **BILL ARNOLD:** Absolutely, they will. They may look very
32 different using the same groupings though, because you may have
33 the exact same Snapper Unit 2 and queen and cardinal snapper,
34 but you say we're not going to use the mean and we're going to
35 use the median and we're not going to use the ORCS or we are
36 going to use the ORCS or we're going to do this and we're doing
37 to do that and it can result in radically different reference
38 points down the line, starting with your MSY proxy. This is,
39 again, a chance to completely revise what's been done and
40 hopefully you guys will take advantage of that opportunity.

41
42 **RICHARD APPELDOORN:** Last question and it's already after five,
43 but this is for Ken, again, because I know you have a broad
44 experience over many of the councils. Are there situations
45 where things are grouped other than by species and so by gear or
46 by -- Let me think of something else. Or just into a
47 multispecies complex that wouldn't just be by family? Like
48 gear, could you have the same species in each gear thing and

1 there's an allocation under each one of those or --
2
3 **JORGE GARCIA-SAIS:** And the fact that several species are always
4 associated with one type of gear and if there is any management
5 associated with fish trapping. That management will affect
6 several species besides not only lobster. I mean there is
7 always indirect effects as well and I agree with that. For me,
8 that's not a very logical grouping, the gear.
9
10 **KEN STUMP:** There definitely are stock complexes that are in
11 multi-gear fisheries being prosecuted by different gear types.
12 In some cases, they tend to be one gear type, just because it's
13 a large trawl fishery or something like that, but in say the
14 South Atlantic snapper grouper, you've got a little bit more
15 diversity of gear, although there is no trawl fishery, per se,
16 in that.
17
18 **RICHARD APPELDOORN:** Are there multispecies in the FMUs with
19 indicator species in the South Atlantic?
20
21 **KEN STUMP:** No, they don't use indicator species.
22
23 **RICHARD APPELDOORN:** But each species is still get its own ABC?
24
25 **KEN STUMP:** For those complexes without an indicator, it's for
26 the complexes alone. Those are, by definition, data poor, like
27 the ones that you're dealing with.
28
29 **RICHARD APPELDOORN:** So there's an OFL for the fishery?
30
31 **KEN STUMP:** For the complex.
32
33 **MIKE LARKIN:** Or there may be an OFL in some cases in the South
34 Atlantic, like the jacks or something like that. It's just an
35 ACL.
36
37 **RICHARD APPELDOORN:** Okay and so there is that kind of
38 flexibility.
39
40 **KEN STUMP:** I mean there's always infinite flexibility. There
41 have been stock complexes where -- I can cite you an example of
42 from ten to fifteen years ago in the North Pacific, where they
43 just lumped a bunch of species that they -- They weren't
44 directed fisheries at the time, but they were concerned about
45 them, because they were bycatch species and they were emerging
46 fisheries like for skates.
47
48 They put, at one point, skates and squid and octopus and sharks

1 all together in another species complex, which they then,
2 through sort of framework amendment process, broke out one-by-
3 one, as they got more data, so that they could manage them more
4 effectively on a species-by-species basis. I think there has
5 been a wide array of approaches to stock complexes and you have
6 a large number of options.

7
8 **JOE KIMMEL:** In the case of something where you have some weak
9 stock management, you can end up having almost an indicator
10 species. They are data rich and so you have an assessment and
11 they're overfished, but then they're caught in the same gear
12 with about twenty or thirty other things and so when you shut it
13 down for -- You're shutting it down because of the stock of one
14 stock.

15
16 **KEN STUMP:** If you go to an indicator species, I mean the
17 guidance in the NS-1 Guidelines says you need to be explicit
18 about which species you're choosing to be your indicator and if
19 you choose a robust stock that is healthy and resilient to
20 fishing as your indicator, but you have weaker stocks in the
21 complex, then you have a much higher risk of overfishing the
22 weaker stocks and you need to account for that in some way.

23
24 One way to account for that would be to set the complex ACL for
25 the weaker stock, but, of course, you guys are dealing with a
26 situation where you don't have that kind of assessment
27 information for most of the species anyway.

28
29 **RICHARD APPELDOORN:** Right and so it's a question of -- I'm
30 going to go back to Shannon. Coming out of our recent SEDAR,
31 which hasn't been finished yet and so this is just a gut feeling
32 on it I guess is what I'm asking. How many species do you think
33 we're really going to be able to have enough information to be
34 able to manage, from being actually able to do an assessment?
35 You can always have ACLs and stuff the way we have in the past,
36 but --

37
38 **SHANNON CALAY:** I mean I'm going to go over kind of a management
39 framework and I agree with you that we would retain some of the
40 ACLs that we've used in the past, but a ballpark -- In Puerto
41 Rico, it might be as many as twenty, but in St. Thomas and St.
42 Croix, it's going to be fewer. It may be a handful of stocks.

43
44 **RICHARD APPELDOORN:** Well, it's not going to be more than
45 twenty-six. That's all they collect species on.

46
47 **SHANNON CALAY:** Right. Well, the trouble with St. Thomas and
48 St. Croix is getting species-specific information, because so

1 much of the information is in complexes, which makes it a little
2 bit difficult. We have to find reliable ways to tease out a
3 species contribution or we have to do a multispecies complex. I
4 think it's more likely we will have a number of species in
5 Puerto Rico and fewer, less than ten, I think in St. Thomas and
6 St. Croix.

7
8 Now, you know, as we evolve, hopefully some of the port sampling
9 that we're doing now will help us increase that number over
10 time, but that's how many we can attempt, given the approaches
11 that exist today. That is not necessarily the number that would
12 be accepted by the SSC as better than -- That's the conundrum,
13 is you would have to review all the assumptions and decide that
14 they are better.

15
16 **RICHARD APPELDOORN:** That's coming, whether we like it or not.

17
18 **SHANNON CALAY:** I mean if you -- Tom Caruthers has a different
19 answer to this question, because he is more comfortable with
20 borrowing from other areas and other species. If you wanted --
21 He calls it the Robin Hood approach, where you rob from the rich
22 assessments to save the poor ones. If you are comfortable with
23 that approach, then we could do more species, but at some point
24 it becomes an absurdity, in my mind, to borrow life history
25 parameters from unrelated stocks.

26
27 **RICHARD APPELDOORN:** We could manage dolphin from lobster is
28 what you're saying?

29
30 **SHANNON CALAY:** So it depends on how comfortable you are with
31 using proxies.

32
33 **RICHARD APPELDOORN:** Yes and so if you don't know the parameters
34 for queen trigger and you borrow them from gray trigger.

35
36 **JOE KIMMEL:** That's a different species or different locations.

37
38 **SHANNON CALAY:** Some of them would be different locations and
39 some would be different species. Some have no information at
40 all.

41
42 **RICHARD APPELDOORN:** What she's saying is you can go borrow as
43 far as you want, but at some point it comes --

44
45 **JOE KIMMEL:** Different location is one thing, but different
46 species is pretty bad.

47
48 **SHANNON CALAY:** Exactly and so in some regions of the world,

1 they are very comfortable with using the proxy information, more
2 comfortable than I think we have been in the United States
3 management than I am aware of.

4
5 **RICHARD APPELDOORN:** I mean that was certainly what we were
6 doing in the life history group. That was different area and I
7 think we actually had some other species issues for maybe
8 maturity or something like that, or longevity.

9
10 **SHANNON CALAY:** Some approaches require less information and so
11 lacking maturity information, you could use some approaches, but
12 at some point you reach rock bottom and you really have no
13 information to inform the model and then you would rely on the
14 recent landings history alone, because that's all you have.

15
16 **BILL ARNOLD:** That may influence the alternatives you want to
17 have available for a clustering.

18
19 **RICHARD APPELDOORN:** That's kind of why I was asking the
20 question and trying to get some bounds on this as we go into the
21 future and start looking at the clusters.

22
23 **JOHN HOENIG:** If you have, for example, a cluster that you think
24 represents a fishable unit and five of the species you estimate
25 the mortality rate has come down and one of the species you
26 don't have any information, instead of saying we have no
27 information, you can say, well, it's in this cluster and
28 everything else in the cluster is behaving this way and so we
29 will go out on a limb and guess that it's gone down, or at least
30 it hasn't gone up. That's why you want your clustering to pass
31 a straight-face test. That's why it's important to have the
32 fishermen say yes, that's what we catch. Then it facilitates
33 these data borrow approaches.

34
35 **RICHARD APPELDOORN:** I think we're ready to adjourn for the day.

36
37 (Whereupon, the meeting recessed on December 8, 2015.)

38
39 - - -

40
41 December 9, 2015

42
43 WEDNESDAY MORNING SESSION

44
45 - - -

46
47 The Scientific and Statistical Committee of the Caribbean
48 Fishery Management Council reconvened at the CFMC Headquarters,

1 San Juan, Puerto Rico, Wednesday morning, December 9, 2015, and
2 was called to order by Chairman Richard Appeldoorn.
3
4 **RICHARD APPELDOORN:** All right. Good morning, everybody. It's
5 day two. Again, let's begin with a roll call. I guess I will
6 start and we'll go the other way this time. I am Rich
7 Appeldoorn, SSC Chair.
8
9 **VANCE VICENTE:** Vance Vicente, SSC member.
10
11 **MIKE LARKIN:** Mike Larkin, Southeast Regional Office, NOAA
12 Fisheries.
13
14 **JORGE GARCIA-SAIS:** Reni Garcia, UPR Mayaguez, SSC.
15
16 **BILL ARNOLD:** Bill Arnold, National Marine Fisheries Service,
17 Southeast Regional Office.
18
19 **TODD GEDAMKE:** Todd Gedamke, SSC member.
20
21 **CHURCHILL GRIMES:** Churchill Grimes, SSC.
22
23 **JOHN HOENIG:** John Hoenig, SSC.
24
25 **JOE KIMMEL:** Joe Kimmel, SSC.
26
27 **SHANNON CALAY:** Shannon Calay, Southeast Fisheries Science
28 Center.
29
30 **KEVIN MCCARTHY:** Kevin McCarthy, Southeast Fisheries Science
31 Center.
32
33 **WALTER KEITHLY:** Walter Keithly, SSC.
34
35 **GRACIELA GARCIA-MOLINER:** Graciela Garcia-Moliner, council
36 staff.
37
38 **YASMIN SANCHEZ:** Yasmin Sanchez, Pew Charitable Trusts.
39
40 **IRIS OLIVERAS:** Iris Oliveras, council staff.
41
42 **GRACIELA GARCIA-MOLINER:** We have Maria Lopez from the Regional
43 Office.
44
45 **RICHARD APPELDOORN:** I believe the next thing on the agenda was
46 the Review of ACL Overages. Is that Bill?
47

48 **NEXT STEPS IN DEVELOPING ISLAND-BASED FMPS**

1
2 **BILL ARNOLD:** Richard, I would like to make sure we're done with
3 Action 2 first and maybe you don't want to address it anymore,
4 but certainly I am curious about setting up a, quote, unquote,
5 subcommittee that we can rely on for some guidance and input.
6 Also, I think recommendations should be made to the council
7 regarding how we're going to deal with Action 2.
8
9 **GRACIELA GARCIA-MOLINER:** There is some information that Mike
10 gave us in looking at the whole dataset, for example, and seeing
11 whether that works out and we will be looking at that by gear.
12 That was suggested and was there another -- Gear and depth?
13
14 **RICHARD APPELDOORN:** Gear, depth, habitat, family, size. I
15 think we were looking also at both an across gear and within
16 gear approach.
17
18 **KEVIN MCCARTHY:** I've got something in my notes about expanding
19 the number of years considered in Puerto Rico, which gives us a
20 longer time series of species-specific data.
21
22 **MIKE LARKIN:** My ignorance, Kevin, but did they change the data
23 form recently, in the last five years or so, in Puerto Rico or
24 that's just the USVI?
25
26 **KEVIN MCCARTHY:** The USVI was a major change and Puerto Rico has
27 had changes over the years, but not in the last handful of
28 years, no, but depends on how far back you go, we will need to
29 investigate that, because there are some other caveats in there
30 as well, the way they were able to report trips in the past.
31 They could have multiple trips reported on a single form, which
32 would give you some strange results, if you're not aware of it.
33
34 **MIKE LARKIN:** I will follow up with you, Kevin, and discuss
35 that.
36
37 **GRACIELA GARCIA-MOLINER:** Also, are we going to be looking at
38 the recreational data for Puerto Rico?
39
40 **RICHARD APPELDOORN:** Yes. That was already on the list to do
41 that Mike gave us.
42
43 **GRACIELA GARCIA-MOLINER:** Bill, did you say you wanted to
44 include Mike and you?
45
46 **BILL ARNOLD:** Mike and I, and Mike in particular, looking for
47 people to turn to, to say we're doing this or what about this
48 and I just -- You know the SSC only meets two times a year and

1 there's long gaps in between and we need SSC input more
2 frequently than that.

3

4 **RICHARD APPELDOORN:** I was volunteering John and myself.

5

6 **BILL ARNOLD:** Okay. That's fantastic.

7

8 **JOHN HOENIG:** My pleasure and I thank you also. I think that
9 the first task that the subcommittee is to figure out what
10 exactly are we looking for and what do we want? Do we want
11 something that can be used to do such and such, because that
12 will color how you do the analysis.

13

14 **BILL ARNOLD:** That's important, John, because if you guys say
15 here is how we're constraining these analyses, I would like for
16 that recommendation to go to the council and for the council to
17 be able to vote on that via motion and to formally establish
18 this and these are the constraints under which we're operating,
19 so that when we then bring back, later in 2016, a grouping type
20 analysis, we can say this analysis was done within the
21 constraints that you provided to us, so that we can avoid what
22 would be my great concern, is them to then say, well, you should
23 have done it this way or you totally missed this or start over
24 or something like that. That's why we're looking for guidance
25 from you guys, so that we know what the rules of this game area.

26

27 **JOHN HOENIG:** All due deference, but I think we have it ass
28 backwards. The council doesn't know what we're talking about
29 and has not asked for this and basically what we should be doing
30 is saying we've got this idea that we can do groupings and we
31 should look at it and see what we can provide and not
32 necessarily what the council isn't even looking for at the
33 moment that if we sort of plant in their head they might get,
34 but rather, we should be saying we can provide this and then we
35 can go to the council and say, look what we've got for you and
36 the council can say, yes, okay, that's good or no, we don't buy
37 into that and then we can ask why and go back and fix it, if
38 need be, but first we have to know what we have to offer before
39 we go to the council.

40

41 Why go to the council and say we might be able to get something
42 that might be useful for this and it's like, what do you expect
43 the council to do, other than to say, oh, you're going to give
44 us groupings that we can use for such and such and, well, maybe,
45 if it works. Then the council will say why don't you first
46 figure out what you've got to offer and then we'll tell you
47 whether we want it.

48

1 **BILL ARNOLD:** Whatever recommendation you guys want to make. I
2 would just like for a recommendation to go to the council next
3 week.
4

5 **JOHN HOENIG:** Well, I think we can alert the council what we're
6 doing. If the council really has a negative reaction, they can
7 say, you know what, we're not interested, but other than having
8 the council vote on something and they're going to want to know
9 what they're voting on and what are its properties and how well
10 does it work and we would have to say, well, we don't have
11 anything yet.
12

13 **RICHARD APPELDOORN:** I don't see where we're making a
14 recommendation at all. We're advising them about how we're
15 approaching this issue.
16

17 **BILL ARNOLD:** Okay.
18

19 **TODD GEDAMKE:** We still have one of the objectives as a
20 question. There's a lot that needs to be thought about before
21 you go to the council next week.
22

23 **JOHN HOENIG:** I agree. Let's keep things simple.
24

25 **JORGE GARCIA-SAIS:** Is there is a deadline for these island-
26 based management or whatever to be in place or in the default we
27 keep working with the ACLs?
28

29 **BILL ARNOLD:** No.
30

31 **RICHARD APPELDOORN:** I mean generally the council could be
32 advised that we are looking at ways to form both FMUs and
33 hopefully indicator species that could be used for the
34 assessment of those FMUs. It just simplifies the assessment
35 process.
36

37 **GRACIELA GARCIA-MOLINER:** Mike, are you coming to the meeting
38 next week?
39

40 **MIKE LARKIN:** No, I'm not attending the council meeting.
41

42 **GRACIELA GARCIA-MOLINER:** I am thinking in terms of it would be
43 worthwhile of you coming to the council.
44

45 **MIKE LARKIN:** It's preliminary. Do you want me to try to do
46 something via webinar or something? Would that be possible?
47

48 **RICHARD APPELDOORN:** I think we'll just wait.

1
2 **MIKE LARKIN:** Yes, we're in the preliminary stages.
3
4 **JOHN HOENIG:** I think it's premature.
5
6 **GRACIELA GARCIA-MOLINER:** Okay and so that's what I wrote up.
7
8 **RICHARD APPELDOORN:** Are we okay with what Graciela wrote up
9 there?
10
11 **MIKE LARKIN:** We also have the recreational landings, too.
12
13 **RICHARD APPELDOORN:** It's in there somewhere.
14
15 **BILL ARNOLD:** We don't have MRIP in Puerto Rico.
16
17 **KEVIN MCCARTHY:** It's MRFSS still. If you use the MRFSS
18 methods, I think they're in the process of upgrading to the
19 latest, which is actually going to have a new acronym, I think.
20
21 **MIKE LARKIN:** C-MRIP? Caribbean MRIP?
22
23 **KEVIN MCCARTHY:** No, everywhere is going to have a new name
24 acronym.
25
26 **JOHN HOENIG:** Do you think MRIP is going to disappear?
27
28 **RICHARD APPELDOORN:** The acronym is going to be different.
29
30 **KEVIN MCCARTHY:** The acronym is going to change, I think.
31
32 **RICHARD APPELDOORN:** NOAA has this thing about every five years
33 having a review and if necessary --
34
35 **KEVIN MCCARTHY:** It may be that I'm mistaken about this, but --
36
37 **BILL ARNOLD:** I think the new one is going to be statistical
38 hierarchies of iterative technology. I don't get 4, Graciela,
39 if you could go back up there. I guess we're asking the council
40 what are we looking for objectives?
41
42 **GRACIELA GARCIA-MOLINER:** John just said that you guys have to
43 decide something to offer the council and so you turned
44 everything around, right? Yesterday, you talked about the
45 council actually giving you the objectives, in terms of what
46 they were trying to do, but today, in terms of this group, you
47 are looking to see what you have to see how you can advise the
48 council and is that correct?

1
2 **RICHARD APPELDOORN:** I think 4 should be taken off. We're not
3 making a recommendation to them.
4
5 **GRACIELA GARCIA-MOLINER:** So take everything out?
6
7 **JORGE GARCIA-SAIS:** Mike, have you tried the species groupings
8 as they are right now for the ACLs?
9
10 **MIKE LARKIN:** Are you meaning --
11
12 **JORGE GARCIA-SAIS:** The species groups as they are right now.
13
14 **MIKE LARKIN:** No, I just ran it with the program and assigned
15 the groupings and so I didn't, I guess, predetermine any
16 clusters. I just tried to let it run free.
17
18 **GRACIELA GARCIA-MOLINER:** The ACL amendments come back from --
19 They date back to the SFA Amendment in 2005. That's where the
20 FMUs were designated and that was mostly because of expert
21 opinion on how to do that. That was a very long process to come
22 to terms with the FMUs as they were set now.
23
24 The idea is to look at the data now and see what groupings fall
25 out of the data the way people are actually fishing for these
26 species, right, and see if that makes sense and perhaps manage
27 by gear, for example, or groupings that fall out of the data.
28
29 **RICHARD APPELDOORN:** I have a note in my notes that someone else
30 recommended, and I wasn't sure if we got it, but it's not there,
31 but it was a question about instead of just using
32 presence/absence -- Was that the way we still wanted to go or
33 did we want to give maybe a rank of weights? I mean do we want
34 to weight things by how much they're in the catch or is it still
35 presence/absence that we want to look at? Anybody have a feel
36 for that either way?
37
38 **GRACIELA GARCIA-MOLINER:** If you put the weights, the amount of
39 poundage that is being reported, that kind of will come back to
40 the same groupings that we have, most likely.
41
42 **JORGE GARCIA-SAIS:** Is the clustering on effort or is --
43
44 **RICHARD APPELDOORN:** The suggestion, I think, was to have a rank
45 of weights and not the actual weights.
46
47 **JOE KIMMEL:** Have like one, two, and three categories or just
48 label them as a one or two or three?

1
2 **RICHARD APPELDOORN:** I could make the recommendation. I thought
3 someone had made it and I jotted it down.
4
5 **MIKE LARKIN:** If you rank it by the proportion of the abundance,
6 you would get -- If you just went with that, you would just get
7 the same result, right, like one, two, three. Species A would
8 still be one and I don't know if it would be fruitful. I could
9 certainly try it, but I am just trying to think what the end
10 result would be.
11
12 **TODD GEDAMKE:** I think once you figure your questions out that
13 you're asking that you should consider -- In the
14 presence/absence, I was thinking about it in terms of picking up
15 a single individual in a trap, versus having trips that are 100
16 percent like yellowtail, for example. I think you're going to
17 end up with different clusters if you look by some abundance,
18 but by gear is just -- You can't look at this stuff not by gear.
19 You have to start by gear. I would also say that I am no
20 cluster expert, but don't reinvent the wheel. Go figure out
21 what other people have done.
22
23 **BILL ARNOLD:** I think we shouldn't even look at what ranking
24 they did before.
25
26 **TODD GEDAMKE:** I think that's also staying within your own
27 kitchen. Go look outside and figure out what other people have
28 done. This has been done all over the place for various
29 purposes and so the questions -- Figure out what your questions
30 are that other people have addressed and what you can cite for
31 following some of those leads.
32
33 **JOHN HOENIG:** Weren't they doing this in California?
34
35 **TODD GEDAMKE:** I was going to say it's been done a lot. Alec
36 McCall is the one that kind of started with some of this and
37 there's a whole chain of application to do it.
38
39 **RICHARD APPELDOORN:** As near as I can tell from what was done
40 last time, from the documents that Graciela sent out, is that
41 things were already grouped by species, by family, and there was
42 a cluster analysis done by depth to show that within those
43 families certain species were being caught together, based on
44 that.
45
46 **JOHN HOENIG:** Who did this?
47
48 **RICHARD APPELDOORN:** I have no idea. The description in that

1 document is very --
2
3 **JOHN HOENIG:** Which document?
4
5 **RICHARD APPELDOORN:** The one that Graciela sent out. If you
6 want to know the details of it, you're really going to have to
7 dig up Nick, it sounds like. It was already done on a setup
8 that has been grouped by family to begin with.
9
10 **BILL ARNOLD:** Do you guys want that or do you want us to have a
11 free-for-all, a total free form?
12
13 **RICHARD APPELDOORN:** I would like free form, but I would like to
14 know -- This is our chance to start over and maybe there is
15 better ways to do it and I don't know. This is truly
16 exploratory.
17
18 **GRACIELA GARCIA-MOLINER:** I don't think that Nick published the
19 -- If he did, I wondered if he has additional slides. I think
20 that talking to him and seeing what he remembers --
21
22 **MIKE LARKIN:** I will.
23
24 **RICHARD APPELDOORN:** I don't think that his analysis went too
25 far, because it was basically the feeling was something had
26 already been set.
27
28 **GRACIELA GARCIA-MOLINER:** I think what Richard is saying is --
29
30 **BILL ARNOLD:** Richard, you would like to see several different
31 approaches, right, so you can -- That's an important piece of
32 guidance.
33
34 **RICHARD APPELDOORN:** Yes and we may end up exactly where we are
35 now, but at least we know that that would be the best way to
36 approach it.
37
38 **JORGE GARCIA-SAIS:** It's going to be difficult to find
39 clustering which -- For similar management. I don't know and
40 I've been thinking about that and any single category you find
41 wide variation. Like, for example, gear, you have lobster, but
42 then a lot of bycatch, but if you look including that bycatch,
43 there are manageable species too and then hook and line, you go
44 for one thing and you get some other stuff at much lower
45 abundances.
46
47 **BILL ARNOLD:** Reni reminds me, Richard, but do you want us to
48 pull some species out and not include them in the analyses, like

1 spiny lobster and queen conch and Nassau grouper? Do you want
2 to provide us with that guidance?
3
4 **GRACIELA GARCIA-MOLINER:** I think that you should pull out the
5 species that we know that we don't have information for, like
6 Nassau and goliath, but maybe spiny lobster and queen conch
7 should remain in, because if you don't have the gear and you are
8 fishing or diving or whatever it is that we're calling it here -
9 -
10
11 **SHANNON CALAY:** I think it would benefit to have some assistance
12 from the Science Center on this issue, too. I am sure that we
13 can offer some assistance.
14
15 **MIKE LARKIN:** Put you on a plane right now?
16
17 **SHANNON CALAY:** I wasn't going to say that in front of the group
18 and I can't commit myself to --
19
20 **BILL ARNOLD:** We're not looking for a formal committee. We're
21 looking for people we can turn to.
22
23 **SHANNON CALAY:** I think it would be beneficial to cooperate on
24 this project.
25
26 **BILL ARNOLD:** Do you want us to name you?
27
28 **SHANNON CALAY:** You can put me as a contact and we will
29 establish people who will assist.
30
31 **KEVIN MCCARTHY:** Unofficially, I have already offered to help
32 and so you can put me down.
33
34 **BILL ARNOLD:** Thanks, Kevin. Thanks, Shannon.
35
36 **JOHN HOENIG:** At some point, we probably also want to get some
37 fishermen and perhaps DAP members, for input as to --
38
39 **RICHARD APPELDOORN:** If there are questions, we can certainly
40 turn to them, if appropriate. Bill, to your question, I will
41 leave this up to the committee if they want to comment on that,
42 but I don't think there is any way we would not have both
43 lobster and conch as their own FMUs. If you're given that --
44
45 **MIKE LARKIN:** The data is already showing it in the clusters.
46
47 **RICHARD APPELDOORN:** So you might as well pull them out.
48

1 **BILL ARNOLD:** What about Nassau and goliath and midnight and
2 blue and rainbow? Those are the prohibited species.
3
4 **GRACIELA GARCIA-MOLINER:** But there is a difference. Nassau and
5 goliath -- I am just saying for the data that Nassau and goliath
6 are prohibited all the way from the shoreline to the 200
7 nautical miles. The three parrotfish are only prohibited in the
8 EEZ and so you're going to have the data for those that are
9 prohibited, since you are using the dataset that includes
10 everything from the shoreline to the 200 nautical miles, I would
11 leave those in.
12
13 **MIKE LARKIN:** Do you know how long the Nassau and goliath have
14 prohibited from harvest? I may not have any data ever. I may
15 have to go back and so I may not be able to cluster them anyway.
16
17 **JORGE GARCIA-SAIS:** Maybe that's a cluster by itself.
18
19 **MIKE LARKIN:** Yes, just by lack of data, it would have to, but,
20 anyway, I will see what I can find.
21
22 **JOHN HOENIG:** Again, it gets back to what you're trying to
23 accomplish with the cluster analysis. Do you want to know, for
24 example, if we allow more harvest on this group, what are the
25 consequences? By excluding some of the species, you're
26 basically ignoring the fact that increasing your harvest of this
27 is going to mean more bycatch of that. In that case then, why
28 are you excluding --
29
30 **RICHARD APPELDOORN:** Not necessarily. It could be the other way
31 around. If you're talking about a conch fishery, where they're
32 also going out and shooting fish, where there's a conch, they're
33 just going to shoot the fish and therefore, it's just the
34 opposite, but the point you're making is --
35
36 **JOHN HOENIG:** The point I'm making is that we're looking for
37 groupings and why? Because they're caught together and so if
38 things are caught together, you want to know that they're caught
39 together and so if you eliminate them from consideration, you
40 won't know what they are caught with.
41
42 Now, with the parrotfish, you could get a distortion. If it's
43 only in the inshore, then it will create groupings, but that's a
44 -- It will sort of confuse things, because the groupings won't
45 be homogenous. I am not sure if it will come to a separate
46 grouping of things that are caught inshore, because you see the
47 parrotfish, or separate from what you're catching offshore,
48 where they are actually catching the parrotfish too, but they're

1 discarding them.

2

3 It takes a little bit of thought and looking at the clusters and
4 seeing if they make sense. My only point was that the decision
5 about whether or not to include some species should not be made
6 right now, because that's why you have a subcommittee.

7

8 **GRACIELA GARCIA-MOLINER:** In fact, you are going to have Nassau
9 grouper, because they wrote it in for a period of time in 2008
10 or 2009, because they were trying to figure out how many they
11 were discarding.

12

13 **JOE KIMMEL:** I might suggest too that whatever dataset you do
14 use and cluster, you might use an alternative statistical
15 procedure that does groupings, like principle component analysis
16 or some other technique to sort of test the cluster to see if
17 you get similar results with two different types of grouping
18 procedures. If you do get similar results, then you're on the
19 right track, I would think.

20

21 **VANCE VICENTE:** Regarding gear, some things are obvious. Nobody
22 goes spearfishing for conch.

23

24 **RICHARD APPELDOORN:** No, but that trip ticket could say went
25 fishing using tanks and caught a certain number of conch and
26 speared a number of fish and the conch are going to show up with
27 the spear ticket.

28

29 **VANCE VICENTE:** Regarding the stratified by gear, the very
30 important thing is with a fish trap you have the depth
31 information. I don't know how good the data is going to be and
32 you have to the fish trap and depth and that would be really
33 significant. With that you would be able to see real clusters,
34 but there are fish traps from five feet down to thirty meters
35 and you do have that information, right?

36

37 **KEVIN MCCARTHY:** Well, when they report it. It's asked for and
38 it's on the form, but it's not always provided and so we may end
39 up with a subset. There's going to be an awful lot of looking
40 at the data and putting together a dataset that has the maximum
41 amount of information, unless there is some procedure that can
42 handle holes in your data matrix. I don't know if that is
43 possible, but we're going to spend a lot of time putting
44 together a dataset. It's not a trivial undertaking.

45

46 **VANCE VICENTE:** But if you select by fishing grounds -- I mean
47 we know where fishermen are fishing and many of them have GPS
48 readings.

1
2 **KEVIN MCCARTHY:** When they report it.
3
4 **VANCE VICENTE:** It could be an indication of location. The
5 thinner you get, the more precise information you get.
6
7 **KEVIN MCCARTHY:** Absolutely.
8
9 **VANCE VICENTE:** So why not focus on areas that are known to be
10 fished regularly? Todd has done that.
11
12 **KEVIN MCCARTHY:** When they've told us where they fish, we can do
13 that, but oftentimes they don't and specific areas of where they
14 have been fishing, that's a recent addition to the data form and
15 so for about 2012 or 2011. Prior to that, they reported where
16 they landed and so you have a vague idea of maybe where they
17 fished, east, west, north, south, northwest, that sort of thing.
18
19 Like I said, there's going to be a lot of -- We're going to
20 spend a lot of time looking at data to get at these kinds of
21 things and how many trips did we have where they told us where
22 they fished and where they told us the depth and all of that
23 kind of stuff. There will be a lot of database sorting and
24 manipulation to get to a dataset and there may be multiple
25 datasets that have different amounts of information that you
26 give a try to each one and see what you get.
27
28 I mean, one of the things, it seems to me, is that if you can
29 try this multiple ways and you more or less end up with the same
30 kind of clusters, that, to me, is a strong argument for that
31 being real, or being informative, of something.
32
33 **VANCE VICENTE:** Even focusing even more narrowly and how far
34 have we got in having cooperative captains in getting the --
35 There has been a lot of progress and I just learned that a
36 couple of weeks ago. Many people are really contentious about
37 what is happening and about conservation and environmental
38 issues and they are becoming cooperative, but I don't know how
39 far we've gone with that.
40
41 I know Todd has done quite a bit of work in the Virgin Islands
42 on that, but that really needs to be expanded. I mean select an
43 area and get good fishermen that you can rely on and find the
44 habitat and they don't have to be specific, because everybody
45 has their own little spots that they don't want to reveal and I
46 understand that, but you know we need to have the whole thing
47 and expand it and that's just a thought.
48

1 **BILL ARNOLD:** Where you guys are talking about each has
2 legitimacy, depending upon the goal, your target, and I would
3 like to discuss that goal a little bit more, because our goal is
4 not research outcomes. It is management applications. That's
5 what these groupings are for, in my mind, is to maximize the
6 efficiency of our management actions and to make sure that they
7 are properly targeted.

8
9 I won't be offended and won't even be surprised if you guys
10 disagree with that, but we need a great deal of clarity on
11 exactly what goal we're trying to achieve with these groupings.
12 I don't think it is to determine what fish are caught together.
13 Maybe you guys do, but I don't think that's the case. The fact
14 that queen conch are caught on a spearing trip means nothing to
15 us, because we're not going to manage them together.

16
17 If they deep water snapper and way back in they hit some species
18 at ten meters, that doesn't mean we're going to manage those
19 species together or that we even want to and so, like I said, we
20 need careful thought and real clarity on exactly what goal we're
21 trying to achieve.

22
23 **VANCE VICENTE:** If there is an emphasis on narrowing in,
24 especially -- An example that is in the conference I gave, the
25 differences within a given local area, to give you an example,
26 Guayanilla Bay and Tallaboa Bay, both one next to each other,
27 it's completely different fisheries landings. I mean I have the
28 data here and it's totally different and it's similar bathymetry
29 and shallow gear, nets. Both are estuarine areas and they are
30 completely different catches with the same habitat and same
31 depth, but different -- For example, in Tallaboa, about 50
32 percent of the catch is mullets, for example, but in Guayanilla
33 it's lobsters and it's such a wide ranging thing, just to give
34 you one example of why we should really narrow it and focus.

35
36 **BILL ARNOLD:** So how do you deal with that in a management
37 context?

38
39 **VANCE VICENTE:** I don't know and that's what I'm asking. The
40 diversity of fish composition and fishery techniques and gear
41 used within a given area is so different in the history of the
42 fisheries within even a local area.

43
44 **GRACIELA GARCIA-MOLINER:** Bill, I think that what the SSC has
45 been saying this morning is that it's a good opportunity to
46 start anew and look at things differently and what John said
47 about let's see about what we can tell the council that we can
48 do with the information that we have are very important things

1 that the SSC is telling us right now.

2

3 What comes out of management and, in fact, you could manage by
4 prohibiting spearfishing and we tried to prohibit hookah and
5 things like that, but you could impact one more than one
6 fishery. Queen conch had other fish that are spear fished using
7 scuba can be impacted by the same fisher and so thinking in
8 terms of we should keep queen conch and we should keep all the
9 species as we are reported and so we are a little bit early in
10 the management idea that we might end up with, because I think
11 that this exploration right now is extremely important.

12

13 I think that both the council and the fishers out there are
14 waiting for us to show them that this is the list of your
15 fisheries in total, rather than only the reef fish or only the
16 queen conch and only the spiny lobster.

17

18 From what I am hearing this morning, I think that this is an
19 excellent opportunity to do just that, explore the information
20 that is available in a different way.

21

22 **JORGE GARCIA-SAIS:** Graciela, we have some species groupings
23 right now which we have been using. I mean why can't we depart
24 from there? I mean what are the benefits of that grouping
25 and what are the drawbacks of those groupings and what are the
26 problems on those groupings?

27

28 I mean, frankly, I can't understand why to start all over again
29 in an approach. We have been dealing with groupings and have
30 that experience of looking at management with groupings already
31 done and I was not here when the criteria was developed to
32 assign those groupings. I mean there is some obvious family
33 depth and habitat considerations in those groupings, but why not
34 depart from the experience that we have gained in management of
35 those species groupings?

36

37 **GRACIELA GARCIA-MOLINER:** You can do that. That's the point.
38 You can do whatever you want. You have asked Mike to look at
39 the data in a different way, to see if that would be preferred
40 to what the council has done already.

41

42 **BILL ARNOLD:** Let me address that, Graciela.

43

44 **JORGE GARCIA-SAIS:** Okay. Looking at that, what is your opinion
45 about that, I mean the groupings that we have compared to what
46 we saw yesterday?

47

48 **BILL ARNOLD:** We have alternatives in this action and one of

1 those alternatives would be use the present groupings and that
2 is set aside, use the present groupings and fit them in.
3 Another one is don't use groupings at all. We talked about this
4 yesterday.

5
6 The third one is the one we're focused on now, develop a new way
7 to group these species and that's what we need guidance from the
8 SSC on and so that's the focus of this conversation. For this
9 new analysis, do we set aside queen conch and lobster or put
10 them into the analysis? Do we set aside this or do we use this
11 technique or do we try multiple techniques and compare the
12 outcomes? It all relates to this idea of taking a new approach
13 to developing clusters.

14
15 **VANCE VICENTE:** I mean we worked so hard to work by species.
16 Remember how much we attacked the Virgin Islands because they
17 were grouping and they had to split it out by species? I know
18 it's more scientific and everything, but conceptually --

19
20 **SHANNON CALAY:** Well, I mean that was for data collection. I
21 mean we're grouping for management.

22
23 **VANCE VICENTE:** I understand.

24
25 **JOHN HOENIG:** You're not grouping for data collection and you're
26 not grouping for analysis. You're only grouping for management
27 and so if you basically say, okay, we have this unit of three
28 species, then you're going to assess all three species and there
29 is nothing that says that you have to do the same thing for each
30 species.

31
32 The reason you grouped them is that you think you're going to
33 similar things, but there is some economy of time in managing
34 these three together. If you put conch and parrotfish in a
35 grouping, it currently has separate models and separate data and
36 separate regulations and so what's the point of grouping them,
37 but if you are going to change a season or a closed area or a
38 depth restriction or something like that, if we were doing it
39 for this species and it's already going to affect that one, we
40 might as well assess them together and that's fine, but defining
41 a grouping does not then require you to do anything except when
42 you consider one species you consider the other.

43
44 I think you're making too much out of this whole big thing and
45 you're thinking that we had better get this right, because once
46 we put it in stone we're going to have to -- You're not going to
47 have to do anything except schedule your assessments for three
48 species at once instead of at different times.

1
2 **SHANNON CALAY:** I talk about this a little bit in the
3 presentation that I made -- I mean I can see alternatives to
4 even assessing every species in the grouping. There is plenty
5 of flexibility even there to assess only those that we actually
6 have the data for and leave the other ACLs from recent landings
7 history alone.
8
9 I think what I see as the only real impact of your groupings is
10 that you close entire units down when you achieve the group ACL.
11 That is really all that the group is doing.
12
13 **JOHN HOENIG:** If you have a group ACL.
14
15 **SHANNON CALAY:** They do, Snapper Unit 1 and Snapper Unit 2 and -
16 -
17
18 **JOHN HOENIG:** You wouldn't have to.
19
20 **SHANNON CALAY:** No, they don't have to, but that's what they
21 have right now and I thought the question on the table was
22 retaining those groups versus alternatives, but the only -- I
23 guess what I'm saying is you can analyze the data any way you
24 want to in a stock assessment context if you're willing to use
25 the ACLs that come out of a stock assessment for one member of
26 the group and an unassessed member might retain a recent
27 landings history alone and you still add them up and you still
28 close the unit down when you exceed a group, if you wanted to do
29 it that way.
30
31 **JOHN HOENIG:** But that's what I'm saying, you don't have to.
32
33 **SHANNON CALAY:** You don't have to and that's correct.
34
35 **JOHN HOENIG:** As we said yesterday, the cluster analysis does
36 not test a hypothesis and give you a P value so that you have
37 some known properties. It simply says here is a grouping you
38 might want to consider and it doesn't do anything more than
39 that. It just says here is a grouping you might want to
40 consider and some of those groupings might actually turn out to
41 be useful and some of them not.
42
43 If you had a grouping that put conch in with parrotfish, you are
44 quite clearly saying, you know what, I don't see any advantage
45 of doing that and so you would separate them out and you're not
46 violating anything, because it's not a statistical model with
47 known properties and it's just an aid to finding groups that
48 might be useful.

1
2 **VANCE VICENTE:** I agree and I think that the work that we're
3 missing and that we should agree on is at what percent
4 similarity or dissimilarity are we going to determine which
5 clusters are we talking about. The times that I have used
6 cluster analysis for taxonomic and systematic purposes, I used
7 80 percent.

8
9 **JOHN HOENIG:** I would say it's totally relevant here to whatever
10 seems convenient. It's only a tool for convenience and
11 scheduling work. How do we want to schedule it? Let's do this
12 species together and why? Because we think that since they're
13 clumped together that we can have some efficiency by putting an
14 ACL for the whole group.

15
16 If you look at it and say, yes, but I don't want this species in
17 because we can have better information for that species, then
18 you do it separately. There is nothing that says -- It's not
19 like P is less than 0.05 and you can't do that. It's like, oh,
20 it's not convenient to keep in this group and we move it and
21 done. Any more than that is just basically making a fantasy
22 that there is some kind of operating scientific principle that
23 doesn't exist.

24
25 **JORGE GARCIA-SAIS:** What you said about the management criteria
26 must be the first thing, we don't really have in place, for
27 example, seasonal closures that are related to spawning of the
28 groups, a seasonal closing for snappers and then for groupers.
29 What I think is are we even considering anywhere in the future
30 changing that? I don't think so.

31
32 That's a main management strategy that this group has developed
33 and has cost a lot of years and a lot of work to achieve and so,
34 by definition, those clusters are already made and are already
35 formed and in the cluster of snappers spawning from this month
36 to this month and the cluster of groupers spawning from this
37 month to this month and the period, the cluster, of deepwater
38 snappers that spawn during that period.

39
40 We already have clusters and are we breaking them apart and
41 starting all over again to end up three months later with the
42 conclusion that we needed to keep them together because the
43 seasonal spawning aggregation is during this period?

44
45 **JOHN HOENIG:** That's exactly the point, is that you already have
46 those clusters that you did with the cluster analysis and you
47 aren't looking with cluster analysis that says you have to do
48 anything.

1
2 If you're happy with the clusters, keep them. If you don't like
3 the clusters, change them and if you don't know what to do, you
4 might want to look at the cluster analysis to see what it says.
5
6 **JORGE GARCIA-SAIS:** I mean do we want those clusters? I don't
7 think that there's anybody here in this room that does not want
8 those clusters and so why can't we depart from here and say,
9 okay, what other clusters do we need? I mean it's a process
10 here that is awkward and I don't know and maybe my mind thinks
11 different.
12
13 **JOHN HOENIG:** You would think that in the cluster analysis that
14 the cluster analysis would identify clusters that we have, by
15 intuition, already formed. If the cluster analysis were to
16 break apart those clusters and say that they're really different
17 groupings --
18
19 **JORGE GARCIA-SAIS:** But if it's by presence/absence and it's
20 never going to happen, because within those clusters there is --
21
22 **JOHN HOENIG:** Why don't we wait and see what the cluster
23 analysis says?
24
25 **JORGE GARCIA-SAIS:** They spawn at the same time.
26
27 **JOHN HOENIG:** Why don't we wait and see what the cluster
28 analysis does and if you want to test it to see whether you
29 believe it and see how it replicates the existing clusters -- If
30 it does, you will say great, I think this is a good tool and if
31 it says this cluster should be broken up, then we can discuss do
32 we believe that? Is that good insight or is that some stupidity
33 in the cluster analysis?
34
35 That's the whole purpose of the exercise and I don't see why
36 we're having endless discussion about having to do the
37 clustering and it's like why don't we first look at the data and
38 try various things and then summarize a report of this is what
39 it says and then you can have all the discussion you want as to
40 whether you think the clusters are meaningful or a waste of
41 time.
42
43 **KEN STUMP:** Bill mentioned that a goal of this would be to
44 achieve efficiency of management action and it just seems
45 important or it seems like this is an opportunity, with this
46 analysis, for you to think about, as the SSC, your part in this,
47 because you're not just making recommendations for council
48 action, but this gets to -- You have to specify the status

1 determination criteria and the OFLs and the ABCs and it may be
2 that different groupings will have dramatic effects on how you
3 do that.

4
5 It may inform thinking of is the current approach really the
6 best or most robust way to deal with all the uncertainty that's
7 involved here or is there another way to do this that
8 facilitates your ability to specify those required reference
9 points.

10
11 I don't think this is just about making it easier or making it
12 efficient for the council to recommend an ACL, but to inform
13 whether the approaches that you use could be improved or not for
14 the things that you are responsible for. That's an obvious
15 statement, but it hasn't been made and it seems like it's, in
16 some ways, more important than making the council's job easier
17 with ACLs.

18
19 **RICHARD APPELDOORN:** Any other discussion on this point? I am
20 assuming that this isn't going to be entirely -- There is going
21 to be communication going back and forth between Mike and the
22 subcommittee and the Science Center and so it will start
23 focusing in on things rather than just trying everything in
24 space and --

25
26 **MIKE LARKIN:** I have a question. When is my deadline? Is it
27 before the next SSC meeting or -- I am just trying to figure out
28 what to do, which is fine, but I just need to make sure I get it
29 done.

30
31 **BILL ARNOLD:** We would like to come back to the next council
32 meeting, which is not yet scheduled, with a pretty clear
33 statement of what alternatives we want to include in this action
34 and get direction as to moving forward with those.

35
36 **GRACIELA GARCIA-MOLINER:** Between April and June.

37
38 **BILL ARNOLD:** It's probably closer to June, right, Graciela?

39
40 **GRACIELA GARCIA-MOLINER:** Yes.

41
42 **BILL ARNOLD:** So we've got some time on this. That's easy for
43 me to say, but it's certainly not next week.

44
45 **GRACIELA GARCIA-MOLINER:** I really think that until you explore
46 a little bit more what Mike has to do and the SSC sees it, you
47 are not really going to have an Alternative 3 to bring to the
48 council, because this one includes -- You already have one in

1 here organized based on landings or patterns by history, et
2 cetera, but I think that's going to be more guided by what Mike
3 will present to the SSC the next time around, because I think
4 that that exploration of the data will really determine if there
5 is a possibility of doing an analysis.

6
7 **BILL ARNOLD:** Well, that's what I said, Graciela.

8
9 **GRACIELA GARCIA-MOLINER:** I am just --

10
11 **BILL ARNOLD:** Evaluate how we can turn these things into
12 alternatives that can be considered by the council. Ultimately,
13 it's the council's decision as to what approach is taken.

14
15 **GRACIELA GARCIA-MOLINER:** What Richard said this morning is this
16 is an excellent opportunity to begin anew and I think that
17 that's really what everyone is expecting, to see a data
18 representation of the local fisheries. Do we have enough for
19 the recommendation in terms of what you are doing next?

20
21 **BILL ARNOLD:** Mike, are you comfortable with it?

22
23 **MIKE LARKIN:** Yes and I will be more comfortable when I get it
24 done.

25
26 **GRACIELA GARCIA-MOLINER:** Any more direction from the SSC for
27 Mike?

28
29 **RICHARD APPELDOORN:** If not, let's go to the next agenda item.

30
31 **GRACIELA GARCIA-MOLINER:** The ACL Overages. Bill.

32
33 **DISCUSSION OF ACL OVERAGES**

34
35 **BILL ARNOLD:** As you guys know, we use an average of the three
36 most recent years of landing and compare them against the annual
37 catch limit that was established back in the 2010 and 2011
38 Caribbean ACL Amendments to determine if those ACLs have been
39 exceeded, based on those averages, and if they have, we have to
40 apply accountability measures, which basically are a shortening
41 of the length of the season in the coming year to ensure that
42 the ACL is not again exceeded, which is a really convoluted
43 approach, but there's nothing we can do about that right now and
44 hopefully we will address this, to some degree, in the new FMPs.

45
46 This is just going to be a summary of what those landings were,
47 and thank you, Mike, for putting all of this together, and how
48 it compares to the ACLs.

1
2 There is two groups of species, those that were included in the
3 2010 Annual Catch Limit Amendment, and that's snappers,
4 groupers, parrotfish, and conch. That's what you see on the
5 screen.

6
7 For Puerto Rico, as you can see for the commercial sector in
8 Puerto Rico, parrotfish and Snapper Unit 2 exceeded their annual
9 catch limits. Not by a lot and by about 3 percent for
10 parrotfish and by about 7 percent for Snapper Unit 2, but that
11 will result in a closure. Keep in mind the length of that
12 closure is not based on the three-year average. It is based
13 upon the most recent year's fishing rate for each month and so
14 even though you have only a 7 percent overage, or even though
15 you have a 7 percent overage and I am not going to qualify it,
16 the closure length may be surprisingly short or surprisingly
17 long relative to that percentage overage because of that most
18 recent year's fishing rate. Next slide, please.

19
20 **RICHARD APPELDOORN:** Wait a minute. So you're saying that, I
21 think in both of these cases, that the recent year was in fact
22 the higher year that drove it over.

23
24 **BILL ARNOLD:** Not necessarily, but it contributes. It could be
25 that --

26
27 **RICHARD APPELDOORN:** I don't think we had overages last year in
28 anything and so --

29
30 **BILL ARNOLD:** No and in 2014, but it could be that 2012 was
31 contributing to 2013.

32
33 **RICHARD APPELDOORN:** They're all contributing to it, but --

34
35 **BILL ARNOLD:** Yes, but you can't necessarily fully attribute it
36 to the most recent year's landings.

37
38 **RICHARD APPELDOORN:** Right. I understand your point.

39
40 **BILL ARNOLD:** All right and so the 2011 Caribbean ACL Amendment
41 addressed this list of species. These are the species and
42 complexes that were not previously identified as undergoing
43 overfishing and in this group, importantly, spiny lobster is
44 five-and-a-half percent over their annual catch limit.

45
46 You have also got triggerfish and filefish and wrasses that
47 exceeded their annual catch limit. In the case of triggerfish
48 and filefish, obviously it's 21 percent and so that's a pretty

1 substantial overage.

2

3 We also in Puerto Rico can address recreational species
4 separately and that's what this is. This is the list of 2010
5 species and what we see here is that -- All I put here is that
6 none of these exceeded the ACL and so all you've got is a final
7 column percent ACL and how much of the ACL was actually taken
8 advantage of.

9

10 I just put the Snapper Unit 2 in red because this is something
11 that I think may influence a lot of our discussions in these new
12 FMPs. Snapper Unit 2's recreational ACL is -- They only used 7
13 percent of it and so they are going over in the commercial and
14 they are way under in the recreational and ultimately the
15 overall annual catch limit that governs Snapper Unit 2 -- If you
16 took the sectors out, Snapper Unit 2's capability of supporting
17 that fishing level has not been exceeded. This is the 2011
18 recreational stuff and for this, the jacks are over by almost 23
19 percent and the others are all under.

20

21 Now we're going to go into the USVI and we will start with St.
22 Croix. Conch, grouper, parrotfish and snapper is all we've got
23 there. We don't have any species level of species grouping
24 units and none of them exceeded their ACL.

25

26 I think, from a Department of Commerce point of view, it's all -
27 - It is somewhat of a concern that the resources are not being
28 taken advantage of. I know Ken is going to probably shoot me in
29 the back of the head, but you're only using 42 percent of your
30 available parrotfish resource, according to what we've
31 established as acceptable catch.

32

33 **GRACIELA GARCIA-MOLINER:** Not to keep this in context, but a
34 number of things have happened in St. Croix to establish these
35 ACLs. Not only have fishing regulations come into place that
36 have really changed the way things are done in St. Croix, but
37 also the Hovenssa closure, the number of businesses that have
38 gone out of business in St. Croix -- You know you just don't
39 have the markets and so it's not really wasted, but it's just
40 that there have been changes that have taken place that are
41 probably limiting the amount of fish that are being taken. In
42 that case, the Department of Commerce should be concerned that
43 they are not taken because of all these other things.

44

45 **BILL ARNOLD:** I will try to avoid the editorial. Sorry, guys.

46

47 **SHANNON CALAY:** Furthermore, if these are poor proxies for the
48 actual maximum sustainable yield, you could be not achieving it

1 because your resource is depleted. How can you know why you're
2 not achieving the ACL? It could be that the stock is in poor
3 condition as well.

4
5 **VANCE VICENTE:** For that reason, we need to know what was the
6 effort. Has the effort been -- Do we have the data? Has the
7 fishing pressure been reduced? I mean this is the result of
8 what?

9
10 **JOHN HOENIG:** There is also the concern that although this
11 doesn't show a crisis that it does not show the opposite either,
12 that there is underutilized resource and we should start
13 encouraging more fishing. I mean it would be absolutely
14 mindboggling stupid for the government to come in and say we're
15 going to subsidize the construction of more boats, because look
16 at that, there is 50 percent unused capacity. It doesn't say
17 that.

18
19 **BILL ARNOLD:** I apologize for bringing it up. The relationship
20 between what we've defined as sustainable yield and what we're
21 actually harvesting, for whatever reason, is not matching up
22 real well.

23
24 **JORGE GARCIA-SAIS:** Bill, just one thing. The fact that they
25 are all more or less along the same lines, it's not that there
26 is a group of species that is going down. It is that the
27 general fisheries is not capturing up to their annual catch
28 limit and that tells that it's not a -- I mean it's not one
29 group of fish or a population and it's generalized and so it's
30 more like an economy type than associated with a specific
31 population.

32
33 **BILL ARNOLD:** Very importantly, these are reported landings.

34
35 **TODD GEDAMKE:** That's what I was just going to add, too. I mean
36 it's no coincidence that you make the joke that Ken is going to
37 shoot you in the back of the head, because for the last three or
38 four years, the fisherman on this island have heard that they
39 are going to be shut down due to parrotfish and so it's no huge
40 leap to determine that reporting behavior is different.

41
42 **BILL ARNOLD:** They are reporting to the ACLs.

43
44 **TODD GEDAMKE:** I mean that seems obvious.

45
46 **BILL ARNOLD:** Okay. 2011 species.

47
48 **JORGE GARCIA-SAIS:** They are not reporting what there is?

1
2 **TODD GEDAMKE:** Do you really think I'm going to respond to that
3 question?
4
5 **JORGE GARCIA-SAIS:** That's what you said.
6
7 **TODD GEDAMKE:** No, I did not. Not even close.
8
9 **MIKE LARKIN:** Can I make a point real quick? These averages are
10 just equal weight and so there's no weighted average and so you
11 could have too high, but if you have a third year that's really,
12 really low, it could pull down the other two and vice versa.
13
14 **BILL ARNOLD:** They will see that at the end of this. We will
15 discuss it. Okay. 2011 species. These are the same 2011
16 species and this is where we will see some ACL overages here and
17 some of them are pretty substantial.
18
19 **JORGE GARCIA-SAIS:** Did you say 2010 species, but then you're
20 reporting the average of 2012, 2013, and 2014?
21
22 **MIKE LARKIN:** It's the 2010 ACL Amendment species.
23
24 **BILL ARNOLD:** It's always three years of landings.
25
26 **JORGE GARCIA-SAIS:** Three years? It's the average of three
27 years? Okay.
28
29 **BILL ARNOLD:** We've got three over here, angelfish,
30 squirrelfish, and wrasses. Those three go over by huge amounts
31 every year and every year the Science Center and the SSC
32 determines that those overages are due to enhanced reporting,
33 because these guys have been added to the forms and they're now
34 being reported. Those three groups, they weren't in the past
35 and the past is -- For St. Croix, it's 1999 to 2005 when we
36 established -- Actually, it's 1999 to 2007, maybe, for the 2011
37 species?
38
39 **GRACIELA GARCIA-MOLINER:** I think it's 2005.
40
41 **BILL ARNOLD:** Not for the 2011. We used the longer timeframe
42 for the 2011, but anyway, the key question is what are the
43 reporting characteristics in 2012, 2013, and 2014 relative to
44 the reporting characteristics back in the early 2000s, when we
45 actually established -- That's the data we used to actually
46 establish these ACLs.
47
48 Again, these overages and for all of these overages, we are

1 going to need guidance and ultimately a formal memo from the
2 Science Center that says for these groups it's due to enhanced
3 reporting, because if it's due to enhanced reporting, we do not
4 apply the accountability measures. Now St. Thomas and St. John
5 2010 --

6

7 **JOHN HOENIG:** Can we go back for a second?

8

9 **BILL ARNOLD:** Sure.

10

11 **MIKE LARKIN:** Keep in mind the ACLs are low too and so you have
12 9,000 landings compared to an ACL of 305.

13

14 **SHANNON CALAY:** I was looking at the landings you've got there
15 for wrasses and for tilefish and for porgies and they're all
16 extremely low, very shockingly low. Are these just commercial
17 or just recreational or combined or --

18

19 **MIKE LARKIN:** This is just commercial.

20

21 **KEVIN MCCARTHY:** The wrasses are still not on the form and so
22 that's why you've got nine pounds. I think for some of these
23 things there may not be the complete suite of species that are
24 on the form and the option to just report say triggerfish as a
25 group may no longer be there. I don't know for each individual
26 one and we would have to go back and look, but that could be
27 some of it.

28

29 There is no longer the option to just report it as something in
30 that species group. In most cases now, there are species-
31 specific boxes on the form and so if you don't know what species
32 you've got or if the species that you have isn't on the form, it
33 may not get reported. I don't know if that's what is going on
34 in these instances, but it's a possibility.

35

36 **SHANNON CALAY:** It just seems very odd to me. Like looking at
37 porgies, there were 4,600 pounds, on average, caught in the
38 recent landings history and now we've got ninety-six in --

39

40 **KEVIN MCCARTHY:** I don't think that's the case for porgies. I
41 don't think porgies are on the form still and I don't think that
42 they were ever on the form and so we will have to go back and --

43

44 **BILL ARNOLD:** The question is, is it a one-to-one or not?
45 That's the key question. If they weren't on the form then and
46 they're not on the form now, the rules are the same. If they
47 weren't on the form then and they aren't on the form now, then -

48 -

1
2 **RICHARD APPELDOORN:** Not necessarily, no. The rules are not
3 necessarily the same.
4
5 **BILL ARNOLD:** To the degree that we can manage those rules, the
6 outcomes of those rules. Everything has changed and there's no
7 question. As Todd pointed out, we put ACLs in place and they
8 are reporting to the ACLs. Things have changed drastically, but
9 there's little we can do about that unless you guys want to
10 devise some expansion factors and apply them to account for
11 these changes in activity.
12
13 **JORGE GARCIA-SAIS:** Spiny lobster is a spiny lobster and it's
14 always been that and also it's been on the forms. It's 57.8
15 percent and what is it, that they don't know how to fish lobster
16 anymore or the lobster fishery is going down? It's across the
17 board, you know. I mean the most first-class fishes that they -
18 - I mean look at triggerfish. It's 60 percent. That doesn't
19 mean -- What I am trying to say is that it is across the board
20 and if were to start looking at that they are not fishing up to
21 their limit because the population is exhausted, that would be
22 particularly true for specific populations and not for the
23 entire fishery list.
24
25 **BILL ARNOLD:** Okay. All of these arguments are great, but this
26 is an informational presentation. Unless you can write in a
27 memo that these overages are due to enhanced reporting, then
28 these percent overages are going to be used to develop
29 accountability-measure-based closures for all of these complexes
30 for which annual catch limits were exceeded based on that three-
31 year average.
32
33 Why and who is reporting what is all great, but it has nothing
34 to do with what we're going to be doing as far as closures are
35 concerned in 2016. It may have a lot to do with how you want to
36 devise these new FMPs and how you want to manage these fisheries
37 going forward. It's interesting in that regard, but not with
38 respect to 2016 closure activity.
39
40 **GRACIELA GARCIA-MOLINER:** It says specifically that the SSC, in
41 conversations with the Southeast Fisheries Science Center, will
42 come up with a recommendation to the council and if these things
43 were not on the form and they are now and they are being
44 reported now and they never had been --
45
46 **BILL ARNOLD:** Actually, it's the opposite, Graciela. The
47 Science Center --
48

1 **GRACIELA GARCIA-MOLINER:** For whatever reason, but the SSC is
2 supposed to look at this and so if it's only informational --
3
4 **BILL ARNOLD:** That's what we're doing.
5
6 **GRACIELA GARCIA-MOLINER:** So it's not an informational
7 presentation. I mean they have to take this into account to see
8 if they are going to advise anything to the council.
9
10 **BILL ARNOLD:** Okay. I'm sure that's exactly what I said. This
11 is informational, except to the extent that you are going to
12 identify species for which the overages are due to enhanced
13 reporting. Otherwise, they are going to get closed and so focus
14 on the topic at hand. I mean, of course, you guys can discuss
15 anything you want, but it's not going to change these outcomes.
16
17 **VANCE VICENTE:** Bill, just at comment. Looking at the landings
18 off of St. Croix, for the mean landings between 2012 and 2013, I
19 mean triggerfish was barely caught. It's down the line.
20
21 **MIKE LARKIN:** This has one more year of data. It's 2014 as
22 well.
23
24 **VANCE VICENTE:** Still, what's the craving for angelfish all of a
25 sudden?
26
27 **KEVIN MCCARTHY:** I think that's a form change thing.
28
29 **RICHARD APPELDOORN:** I will also note that the catch in St.
30 Croix also exceeds the ACL for all of Puerto Rico and St. Croix
31 is a lot smaller island, which is not to say it's not a
32 reporting issue, but it will become an issue when we're setting
33 our new ACLs.
34
35 **SHANNON CALAY:** Looking down that table -- This is a rather
36 uninformed comment, or at least naïve, but I think that some of
37 these overages are caused by form issues, but, in general, the
38 other stocks are almost uniformly under, substantially, which,
39 in my mind, if these numbers are correct, indicates that we
40 could have systematic underreporting in St. Croix. There is
41 really no reason for these numbers to be lower than the recent
42 landings history. We haven't put in effort controls.
43
44 **BILL ARNOLD:** Some of it goes back to the collapse of their
45 economy.
46
47 **RICHARD APPELDOORN:** That includes the tourism, which is --
48

1 **BILL ARNOLD:** They don't export. They don't have anybody to
2 sell that stuff to.
3
4 **RICHARD APPELDOORN:** Right and this is what the fishermen have
5 been telling us.
6
7 **KEVIN MCCARTHY:** Right and it's simple enough, if we want to
8 explore this, to go in and look at how many trips we've made
9 over the years, or at least reported, over time and then we
10 would know. Now, getting at more specific effort measures can
11 sometimes be problematic, due to incomplete reporting, but they
12 do -- We know how many trips they reported and so we can get at
13 things like that. If there is interest there, then that's a
14 data request that would come to me, probably.
15
16 **WALTER KEITHLY:** I think it's more complicated than that,
17 because you also have fishermen being put on quotas on what they
18 can bring in and so it's not just looking at the number of
19 trips.
20
21 **RICHARD APPELDOORN:** No, if they're selling directly to the --
22 The way they say it is that they basically go where there's fish
23 to sell and so if they are getting orders for half the amount of
24 fish, but still on a timely basis, they're making the same
25 number of trips, but not --
26
27 **KEVIN MCCARTHY:** Sure, but you can also look at average catch
28 per trip.
29
30 **WALTER KEITHLY:** But the average catch may be down due to market
31 quotas or --
32
33 **KEVIN MCCARTHY:** Right and regardless, I mean it would tell you
34 this may be why and if that's a downward trend, that's going to
35 tell you something about why almost uniformly things are down.
36
37 **BILL ARNOLD:** These are important considerations within the
38 context of Action 3, which we'll soon be talking about, and
39 exactly how new reference points are going to be established and
40 so I am not disappointed with the conversation, but it's not
41 going to change the outcomes of this particular activity that
42 SERO is going to undertake in the coming weeks.
43
44 **KEVIN MCCARTHY:** Right and the reason I mention that is we could
45 speculate -- We could look at this all day and speculate, but if
46 the SSC wants to investigate further, then it seems to me the
47 way you get at that is to -- That's maybe step one. Let's see
48 what the effort was and people have said that. Is there a

1 change in effort? Is there a change in catch rates or at least
2 mean catch rates across trips?

3
4 I am just pointing out that we could -- You all can talk about
5 whatever you want. I am not on the SSC, but if you want to get
6 at that, that's a data request, it seems to me, or you could
7 continue chatting.

8
9 **RICHARD APPELDOORN:** I think this is obviously something that is
10 going to have to be done very explicitly as they're developing
11 the plans, because all of the ACLs are going to have to be
12 revisited and we're going to have to look at the trends.

13
14 In addition to what you're saying, we also have hopefully some
15 better length data and we'll have the assessments as well and so
16 there will probably be at least three of those for St. Croix at
17 that point and so if these things are really representing
18 overfishing, that they can't in fact get to their targets, we
19 should also see, in fact, some densities in the length
20 structure.

21
22 **VANCE VICENTE:** Bill, where are the tilefish there? That's the
23 second most important landings.

24
25 **RICHARD APPELDOORN:** It's on the previous slide.

26
27 **JORGE GARCIA-SAIS:** If there is an overage that cannot be
28 justified based on the forms, for whatever reason, is the entire
29 fishery closed down?

30
31 **BILL ARNOLD:** For a period of time. The entire complex is
32 closed. If parrotfish has an overage, nothing happens to
33 snapper. We just deal with parrotfish.

34
35 **JORGE GARCIA-SAIS:** Okay and what about the angelfish? What
36 about squirrelfish? We have a problem that it wasn't on the
37 form and there is no -- Whatever happens, just for example, for
38 the upcoming possible situations? I mean the entire fishery
39 closes because of the squirrelfish?

40
41 **RICHARD APPELDOORN:** No, they can't land squirrelfish.

42
43 **JORGE GARCIA-SAIS:** They cannot land squirrelfish? Okay. Got
44 you.

45
46 **BILL ARNOLD:** Not to lead the group, but angelfish,
47 squirrelfish, and wrasses have, for the past two years at least,
48 been identified as having overages due to enhanced reporting,

1 because they were added to the forms. I don't know personally
2 that anything has changed between last year and this year. I
3 will just leave it at that and let's go to St. Thomas/St. John.
4

5 **JORGE GARCIA-SAIS:** Is hogfish included under wrasses?
6

7 **RICHARD APPELDOORN:** Yes.
8

9 **JORGE GARCIA-SAIS:** Yes? Why is that annual catch limit so
10 incredibly low?
11

12 **KEVIN MCCARTHY:** It's never been on the form and it's not on the
13 form now and so those are one or two trips that somebody
14 reported some hogfish. It's one or two trips that somebody
15 reported some hogfish in the last couple of years.
16

17 **JORGE GARCIA-SAIS:** It's causing problems if we don't do
18 something about it. It's going to always been an overage.
19

20 **BILL ARNOLD:** So we'll be arguing something about it. That's
21 what the new FMPs and Action 3 of the new FMPs is all about.
22 That's why --
23

24 **GRACIELA GARCIA-MOLINER:** Doing something about changing the
25 form if you need to get information.
26

27 **BILL ARNOLD:** Now we're going to do St. Thomas. Again, no
28 overage and queen conch is not allowed to be harvested in
29 federal waters and so its annual catch limit is zero for federal
30 waters. Landings are 380 pounds and some of these are
31 surprisingly low, because they still are legally allowed to
32 harvest from state waters.
33

34 **KEVIN MCCARTHY:** Yes, but I don't think conch has been the same
35 kind of important species in St. Thomas as it is in St. Croix.
36

37 **RICHARD APPELDOORN:** It is recreationally, but it's commercially
38 not.
39

40 **KEVIN MCCARTHY:** Yes, which is a big hole in our data, not
41 having the recreational data from the Virgin Islands.
42

43 **BILL ARNOLD:** We're working on it. Painfully slow, but we're
44 working on it. Okay. The 2011 species, these same three,
45 angelfish, squirrelfish, and wrasses. Those are the overages
46 for the USVI, those three groups, both islands.
47

48 **GRACIELA GARCIA-MOLINER:** Are wrasses on the St. Thomas form now

1 and is hogfish on the St. Thomas form now?
2
3 **KEVIN MCCARTHY:** I will have to check. I don't think it is.
4
5 **MIKE LARKIN:** It's the same form, isn't it, Kevin, for St.
6 Thomas and --
7
8 **KEVIN MCCARTHY:** No and it's not -- Not the trap fishery and I'm
9 not sure that the species that are on the St. Croix form that
10 are the same species that are on the St. Thomas form, even
11 without the trap thing. A lot of them are the same, but not
12 necessarily all.
13
14 **BILL ARNOLD:** Okay. Here is what we end up with ACL overages
15 and the overage relative to the annual catch limit. Commercial
16 queen conch, don't worry about that, because in Puerto Rico, the
17 harvest of queen conch in federal waters is prohibited and so we
18 have a zero annual catch limit. As I said earlier, it's legal
19 in state waters. They harvested 260,000 pounds, almost, but we
20 don't institute an AM-based closure based on that.
21
22 Parrotfish, I think I showed you all of these percentagewise
23 before. It's 1,487 pounds over and et cetera, et cetera. You
24 are welcome to look at the table, but, really, except for that
25 St. Thomas/St. John queen conch, which is irrelevant, all of the
26 pertinent overages are probably going to be in Puerto Rico,
27 unless you want to change your determination that those
28 angelfish, squirrelfish, and wrasses are no longer due to
29 enhanced reporting.
30
31 The other question you need to consider is are any of those
32 Puerto Rico overages due to enhanced reporting? Do you have any
33 evidence in that regard?
34
35 **KEVIN MCCARTHY:** We will have to talk about when you pulled
36 these data. This is specific to Puerto Rico, because of the
37 whole expansion factor thing.
38
39 **BILL ARNOLD:** We waited on them.
40
41 **KEVIN MCCARTHY:** Okay and so some decision was made?
42
43 **BILL ARNOLD:** Yes.
44
45 **KEVIN MCCARTHY:** Because they have a very odd thing going on
46 this year and I think it was out of Fajardo that they --
47
48 **BILL ARNOLD:** Kevin, that's why we're running late on this and

1 that's why you guys have had so little time, is because we
2 waited as long as we could.
3
4 **KEVIN MCCARTHY:** So you might reference that specifically when
5 you guys send this over.
6
7 **BILL ARNOLD:** We already sent them.
8
9 **KEVIN MCCARTHY:** You already sent over a request?
10
11 **BILL ARNOLD:** We sent a memo and you were supposed to respond.
12
13 **KEVIN MCCARTHY:** I just haven't seen it.
14
15 **BILL ARNOLD:** Your response is due Monday. We have to report
16 this at the council meeting.
17
18 **GRACIELA GARCIA-MOLINER:** So is there an expansion factor used
19 for Puerto Rico?
20
21 **BILL ARNOLD:** Yes.
22
23 **MIKE LARKIN:** For each coast, yes.
24
25 **GRACIELA GARCIA-MOLINER:** For each coast?
26
27 **MIKE LARKIN:** We worked with Daniel Matos on that, yes.
28
29 **GRACIELA GARCIA-MOLINER:** Is that the same correction factor
30 that went to the Science Center or it's separate from the
31 Science Center?
32
33 **KEVIN MCCARTHY:** No, it's the same. Puerto Rico develops those
34 numbers, develops those expansion factors, or correction
35 factors, as they call them. We get it from them and these data
36 do not belong to us. We just house them.
37
38 **BILL ARNOLD:** That's right and we get it from the Science
39 Center. There is no short-circuiting this process. It's very
40 formal.
41
42 **GRACIELA GARCIA-MOLINER:** The reason why I'm asking is because
43 you said you waited until -- I am trying to figure out that it
44 went to the Science Center and then it came to you with the
45 correction factor?
46
47 **BILL ARNOLD:** We only get data from the Science Center. We
48 don't get data from anybody else. One thing I would like to

1 point out is this is the first year that we have been able to
2 use three years of complete data from all three islands and
3 that's why we waited. We wanted to actually be able to --
4 Because like last year, I think we didn't use 2013 and we just
5 used 2012 and --

6
7 **KEVIN MCCARTHY:** That was the expansion factor.

8
9 **BILL ARNOLD:** Yes and so we used the expansion factor from 2012
10 for 2013 and so this is the first year where we feel like all
11 the landings for all the years for all the islands are, quote,
12 unquote, final landings. Do you want to take a break?

13
14 **RICHARD APPELDOORN:** I do, but you're not done yet.

15
16 **BILL ARNOLD:** Now we're going to go to a slightly separate topic
17 and so, Richard, if you want to take a break, this is a perfect
18 time.

19
20 **RICHARD APPELDOORN:** Okay. Five minutes.

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

23
24 **GRACIELA GARCIA-MOLINER:** Do you want to take the parrotfish or
25 the snapper unit --

26
27 **RICHARD APPELDOORN:** Unless we have some information to the
28 contrary that these constitute overages -- That's the question.
29 They are very small overages and there will be some penalty to
30 pay at some point and hopefully they won't do it right at the
31 Christmas season.

32
33 **GRACIELA GARCIA-MOLINER:** That is the closure dates. Bill, you
34 forgot this slide.

35
36 **BILL ARNOLD:** No, I didn't. I'm not done.

37
38 **RICHARD APPELDOORN:** When I asked you if you were done, that's
39 what I --

40
41 **BILL ARNOLD:** No, I said it's a good time to take a break.

42
43 **GRACIELA GARCIA-MOLINER:** These will be the closure dates,
44 right?

45
46 **BILL ARNOLD:** Those are the closure dates. They are not as
47 trivial as some of the landings and that's what I tried to point
48 out earlier in the presentation.

1
2 **RICHARD APPELDOORN:** On what?
3
4 **BILL ARNOLD:** 2014 landings.
5
6 **RICHARD APPELDOORN:** No, those are driving how much has to be
7 altered and what's driving the dates?
8
9 **MIKE LARKIN:** What is the ACL? For example, in 2014 --
10
11 **RICHARD APPELDOORN:** No, that's not the question. We've been
12 working on -- The council has been working on a procedure to
13 define when is the best time to close.
14
15 **BILL ARNOLD:** That has not been --
16
17 **GRACIELA GARCIA-MOLINER:** That just went to public hearings and
18 that has not come in yet.
19
20 **BILL ARNOLD:** They will all start on December 31 and count
21 backwards into the year for the number of days required to
22 remove the poundage overage.
23
24 **RICHARD APPELDOORN:** Legally, that's what has to be done, those
25 dates?
26
27 **BILL ARNOLD:** It has to be December 31. It's not my choice.
28 That came straight to us from General Counsel.
29
30 **GRACIELA GARCIA-MOLINER:** It's just that we went to public
31 hearings on the timing issue and in Ponce, they expressed that
32 they wanted changes. Mayaguez was not -- The default right now
33 is December 31 and back into the year.
34
35 **BILL ARNOLD:** Yes, assuming that that amendment moves forward,
36 or that's the assumption. Then in 2017, we may have different
37 start dates, but not for the 2016 fishing year and that's what
38 this is all about.
39
40 Using Snapper Unit 2 as an example, that's 7 percent over, but
41 you're losing over two months of fishing. That's because in
42 2014 their fishing rate went way up.
43
44 **WALTER KEITHLY:** It would be because of very little fishing in
45 November and December in 2014, correct?
46
47 **BILL ARNOLD:** Those harvest rates are up in 2014. We have to
48 use the 2014 harvest rates to determine how long we need to

1 close this and so now that they're -- Because their harvest
2 rates are up, the actual amount in 2014 -- This is where things
3 get a little tricky. The amount that actually has to be removed
4 is not an average and it is what they went over in 2014. In
5 2014, they were over by 20,000 pounds or 30,000 pounds or
6 something like that. That's what you've got to remove, because
7 if you don't remove it, then in 2016 they're going to be another
8 20,000 or 30,000 pounds over. To get that out, you have to
9 close for over two months.

10

11 **KEN STUMP:** The catch rate is based on poundage per trip?

12

13 **MIKE LARKIN:** Yes, we did look at the pounds per trip, yes, and
14 then looked at it on a daily and then by month.

15

16 **KEN STUMP:** So why did they go up in 2014?

17

18 **GRACIELA GARCIA-MOLINER:** That's an interesting question and
19 this is what is happening. The DNER had set a number of very
20 specific permits to be used in the Snapper Unit 2 fishery.
21 There were between fifty-four and sixty and I can't remember how
22 many, but of those people that were permitted, they had a limit
23 of 120 trips per year per person.

24

25 **BILL ARNOLD:** When did this go into effect, Graciela?

26

27 **GRACIELA GARCIA-MOLINER:** In 2013 and 2014 and so they have this
28 in place, supposedly, and they also have an additional
29 requirement that they are supposed to provide monthly landings
30 data -- The regular landings can come in over a period of three
31 months or something like that, but in this case, they are
32 supposed to submit monthly landings to the DNER.

33

34 They have the fishery that has already gone over the ACL and
35 this is almost exclusively an EEZ federal fishery and so having
36 that in place, the restriction is also on landings and so the
37 person who brings the fish in has to have this permit.

38

39 In addition to that, you have a seasonal closure for Snapper
40 Unit 1 that closes October, November, and December and so that
41 means that when this closure goes into effect next year that the
42 deepwater snapper fishery in Puerto Rico will be closed.

43

44 **UNIDENTIFIED MALE:** Why?

45

46 **RICHARD APPELDOORN:** Because of the seasonal closure and the
47 other one.

48

1 **GRACIELA GARCIA-MOLINER:** Silk has a seasonal closure in both
2 the state and the federal waters.
3
4 **RICHARD APPELDOORN:** This goes back to the question of why do we
5 have to deal with dates?
6
7 **GRACIELA GARCIA-MOLINER:** Why do we have to what?
8
9 **RICHARD APPELDOORN:** Legally, we have to deal with these dates
10 when --
11
12 **BILL ARNOLD:** Legally, these dates would apply unless it's due
13 to advanced reporting.
14
15 **GRACIELA GARCIA-MOLINER:** What we've done is that we've
16 requested from the local government a presentation to the
17 council next week on the number of permits that they have
18 provided and if there have been any changes in the limited entry
19 scheme that they have set up and if there has been any
20 monitoring of the landings. The reason why I was asking about
21 the expansion factors is because that might be an additional
22 issue with the Snapper Unit 2 reporting.
23
24 **RICHARD APPELDOORN:** That's the first question that came to my
25 mind, is the new expansion factors.
26
27 **GRACIELA GARCIA-MOLINER:** I have not received a response yet and
28 I was just asking Miguel if he had checked to see if we were
29 going to get a report from the local government regarding that.
30 Regardless of that, there should have been monitoring of the
31 landings from the local government before they sent them to the
32 Science Center, because we are obligated to use the Science
33 Center data. I am just saying these are all the problems that
34 are coming up next week and so enhanced reporting and the
35 overage.
36
37 **BILL ARNOLD:** Two things are disappointing about this. Go
38 ahead, Walter.
39
40 **WALTER KEITHLY:** The enhanced reporting is that they have to
41 report every month or every third month?
42
43 **GRACIELA GARCIA-MOLINER:** Right.
44
45 **BILL ARNOLD:** The two disappointing things are the expansion
46 factor is a general expansion factor and it's not specific to
47 Snapper Unit 2. It is across the board. The second thing is
48 Snapper Unit 2 is 7,000 or 8,000 pounds over, but they've got

1 22,000 pounds in recreational quota or 28,000 pounds that they
2 didn't touch and so if you put those two together, you wouldn't
3 have been over the allowable catch of the species as a whole.
4

5 There is nothing we can do about that that I know of. Maybe
6 there is and I don't think so, but it's a little frustrating.
7 Ultimately, the resource itself did not exceed its ACL. Just
8 one sector did and apparently, and this is so muddled to me that
9 I can hardly comprehend it, but there are recreational guys
10 going over and fishing as commercial fishermen with these
11 beginner licenses and so they walk away from their 30,000 pounds
12 of recreational quota and go over and extract from the
13 commercial.
14

15 **GRACIELA GARCIA-MOLINER:** No, no, no, because there has to be --
16 This is one of the reasons and this is why is why we're asking
17 the local government to tell us who are the commercial fishers
18 and who have permits.
19

20 **BILL ARNOLD:** But this is 2012, 2013, and 2014 and in 2012, at
21 least, there were recreational guys fishing the commercial
22 quota.
23

24 **GRACIELA GARCIA-MOLINER:** That's correct, but we're using 2014
25 in this case and so we're looking at time when we have already
26 established the whole government restrictions, because that what
27 you said, that we're using 2014 only for the --
28

29 **BILL ARNOLD:** Only for the closure length and not for the
30 determination of the ACL that was exceeded.
31

32 **GRACIELA GARCIA-MOLINER:** If you have decreased the number of
33 people that are supposed to be in this fishery, and that's what
34 we did, to sixty.
35

36 **SHANNON CALAY:** It seems that SSCs, other SSCs, have control
37 rule working groups who change, from time to time, the way the
38 control rule functions and biologically the way we're treating
39 the recreational and commercial sector in the Caribbean, there
40 is no difference and you could solve that and create an across-
41 sector ACL and then you could manage those sectors with ACTs and
42 it's not so much of a penalty then if you exceed them. We could
43 and I --
44

45 **BILL ARNOLD:** That would be great.
46

47 **RICHARD APPELDOORN:** What's ACT?
48

1 **SHANNON CALAY:** ACT is allowable catch target and then if you
2 exceed your catch target, there is no accountability measure.
3 If you exceed the ACL, there is an accountability measure.
4
5 **KEN STUMP:** They have even in the South Atlantic recently
6 changed the accountability measure so that it's only triggered
7 if the overage is for both sectors.
8
9 **SHANNON CALAY:** Right and so I think that you do actually have
10 plenty of flexibility.
11
12 **BILL ARNOLD:** You mean in the future or to deal with this
13 situation?
14
15 **SHANNON CALAY:** The SSC has flexibility to modify their control
16 rule at any time, but then it has to be adopted by the council
17 is my understanding, but I think the council -- I mean the order
18 of business in the Gulf, which I am more familiar with, is the
19 council asks the SSC to establish a control rule working group
20 and then bring the new control rule to the council, which the
21 council then decides whether or not they adopt. That's what
22 happens in the Gulf anyway.
23
24 **GRACIELA GARCIA-MOLINER:** Yes, but we had the SSC meeting before
25 we knew that this was coming and so the council has not seen
26 this.
27
28 **KEN STUMP:** These are recommendations you could make.
29
30 **RICHARD APPELDOORN:** Yes and I mean we're not actually going to
31 go to a closure until October 2 and so there is actually time to
32 revisit all of this.
33
34 **GRACIELA GARCIA-MOLINER:** Does it have to be published?
35
36 **SHANNON CALAY:** Yes.
37
38 **BILL ARNOLD:** You would have to schedule another council
39 meeting. It could be a telephone council meeting. We've done
40 it before, but it would have to be --
41
42 **GRACIELA GARCIA-MOLINER:** When does this have to be published,
43 so that we know when the council meeting has to take place? I
44 don't remember and it's just that --
45
46 **BILL ARNOLD:** Last year, because of the delays, we didn't
47 publish Puerto Rico commercial. We separated it out and we
48 didn't publish it until March or April maybe.

1
2 **GRACIELA GARCIA-MOLINER:** It's early in the year.
3
4 **BILL ARNOLD:** Okay, but that doesn't define the latest date that
5 it could be done. That's just the latest example of how we
6 could go beyond what we should be doing and --
7
8 **RICHARD APPELDOORN:** Is that the legal date that we would have
9 to do it by to --
10
11 **BILL ARNOLD:** No, the beginning of the year. On or near the
12 beginning of the year. So on is easy and the year is subject to
13 interpretation. Besides that, we could put all of this together
14 and put it out there and still conduct the meetings and
15 reevaluate and then submit a revised approach to our AM-based
16 closures. These are things that can be talked about at the
17 council meeting next week and if the council has the will to do
18 this, then there may be options, but it's going to require
19 additional meetings that work within the notification process
20 and I don't think that's impossible. Like I said, we have had,
21 quote, unquote, emergency telephone council meetings in the
22 past.
23
24 **GRACIELA GARCIA-MOLINER:** The SSC, if you do see fit to make a
25 recommendation to the council that, for example, we change to
26 the commercial and the recreational, et cetera, this would be a
27 good time to do it, so that can be brought to the council next
28 week.
29
30 **BILL ARNOLD:** You know if they were wrecking this fishery, I
31 would not be a proponent of this, but they're not. They are
32 totally in toto within the constraints of the sustainable
33 fishery we have defined and so it's just counterproductive to
34 close this commercial fishery when the total ACL has not been
35 exceeded.
36
37 **WALTER KEITHLY:** What is the confidence interval around the
38 recreational catch?
39
40 **MIKE LARKIN:** I could calculate that. I don't have it available
41 right now.
42
43 **BILL ARNOLD:** They reported about 2,000 pounds of recreational
44 catch.
45
46 **WALTER KEITHLY:** I just remember whatever the term is that they
47 used, not confidence interval, but it's large in Puerto Rico, as
48 I recall.

1
2 **RICHARD APPELDOORN:** Although it is one of the species that's
3 higher on the list.
4
5 **KEVIN MCCARTHY:** Depending upon what dataset you got from
6 Vivian, it will be there, because she calculates that.
7
8 **BILL ARNOLD:** So these are the ACL overages and then we're going
9 to talk about the OFLs. Are you guys ready to move on? Do you
10 want to make a recommendation to the council as to how to
11 address this issue?
12
13 **TODD GEDAMKE:** Can I ask a bigger question? This started out as
14 informational and now we're talking about recommendations and
15 what are we actually -- Are we supposed to be making
16 recommendations on this? Are we going to be --
17
18 **RICHARD APPELDOORN:** At some point we have to make a
19 determination of whether this is a reporting issue or an actual
20 overage.
21
22 **TODD GEDAMKE:** So this is not informational and this is supposed
23 to be --
24
25 **RICHARD APPELDOORN:** It's information, but we have to act on it.
26
27 **TODD GEDAMKE:** Go back to the 433 pounds that comprise the --
28 St. Croix.
29
30 **GRACIELA GARCIA-MOLINER:** No, this is St. Thomas.
31
32 **TODD GEDAMKE:** Then go back. There you go. I mean that's one
33 we have to address, right?
34
35 **BILL ARNOLD:** If they didn't exceed their ACL, nothing needs to
36 be done.
37
38 **TODD GEDAMKE:** Well, I mean those three, you've got a 3,000
39 percent overage and so 128.6, which I'm really glad there's a
40 decimal point there for seven and nine pounds. Can we all just
41 agree that that's just a reporting issue and be done with it?
42
43 **BILL ARNOLD:** I hope so.
44
45 **TODD GEDAMKE:** Yes?
46
47 **KEVIN MCCARTHY:** Wait a second. I have a question, because you
48 sent a data request to the Science Center and now I am hearing

1 this is an SSC decision.
2
3 **BILL ARNOLD:** The Science Center, in cooperation, or whatever
4 word it is, with the SSC will make the determination as to
5 whether it's enhanced reporting or an actual overage in the
6 catch, an actual increase in the catch. The Science Center
7 drives this, but they make the decisions in cooperation with the
8 SSC. Here is the SSC and Science Center cooperative
9 opportunity.
10
11 **KEVIN MCCARTHY:** I am not giving you a response.
12
13 **BILL ARNOLD:** You don't have to give me a response. You have to
14 talk to the SSC.
15
16 **KEVIN MCCARTHY:** I am not giving the SSC a response. We have --
17
18 **TODD GEDAMKE:** I think procedurally, Kevin, you're making a very
19 good point here and that is that we're taking -- You have
20 requested the information from the Science Center for them to
21 tell us that information is valid and this is what the Science
22 Center is going to stand behind and you're giving us a
23 PowerPoint presentation here that's been derived not from the
24 information directly from the Center and we're supposed to weigh
25 in on that.
26
27 **BILL ARNOLD:** What do you mean not directly from the information
28 of the Science Center? All of this data comes straight from the
29 Science Center.
30
31 **TODD GEDAMKE:** So that data request has been filled?
32
33 **KEVIN MCCARTHY:** No, we gave them this data and they made these
34 calculations.
35
36 **BILL ARNOLD:** I am telling you what the overage is and it's up
37 to you guys to determine whether it's due to enhanced reporting.
38
39 **TODD GEDAMKE:** Just procedurally, if it's the Science Center and
40 the SSC, I am just wondering whether -- It seems to me if the
41 Science Center should be weighing in on providing their basis on
42 this or their rationale prior to the SSC making a call on this.
43 Does that make sense?
44
45 **RICHARD APPELDOORN:** Yes, because the first thing I would have
46 said is I don't see for some of these -- When we're talking
47 about Snapper Unit 2 or the lobster fishery or what's going on
48 there, the answer is I don't know and I would like to see some

1 current data and I want to know what happened to the conversion
2 factors and we don't have that information.
3
4 **KEVIN MCCARTHY:** The only thing I can supply you with today is
5 what was on the form and what wasn't.
6
7 **JORGE GARCIA-SAIS:** That is good, because I haven't seen the
8 form. Maybe some time in history I saw it for a little while,
9 but I haven't really seen it to make a judgment.
10
11 **GRACIELA GARCIA-MOLINER:** Do you want to send it to me and I can
12 put it on the screen?
13
14 **KEVIN MCCARTHY:** I wasn't going to send it to you. I'm just
15 going to tell you, once I find it. What I've got is a draft, a
16 rough draft, a very rough draft, of sort of a history of what
17 was on the form by species, species group, the whole bit,
18 everything from pot fish to very specific species information
19 and what was on the form on each of the islands and so at some
20 point I will probably shoot that to you, just to get somebody
21 else looking at it, but it's not ready for getting out there
22 yet.
23
24 **MIKE LARKIN:** Can you shoot it to me, to see if I get the same
25 species you get? Anyway, go ahead.
26
27 **KEVIN MCCARTHY:** Have you already done this exercise?
28
29 **MIKE LARKIN:** I have only done it for the recent years, so like
30 2011 to 2014.
31
32 **KEVIN MCCARTHY:** This begins in 1983 in Puerto Rico and in the
33 early 1970s for the Virgin Islands.
34
35 **BILL ARNOLD:** Kevin, the Puerto Rico 2011 species, the data
36 range begin in 1988 and it ran until 2007 or 2008 or so. The
37 question is, was there a difference in reporting during that
38 time versus 2011, 2012, 2013, and 2014, when we derived our --
39 The others only go back to 2009 and 2010 for St. Croix and 2009
40 for St. Thomas, 2010, but for Puerto Rico 2011 species, it goes
41 way back. The Puerto Rico 2010 species, it only goes back to
42 2009. These are the data ranges that were used to establish
43 those ACLs.
44
45 **KEVIN MCCARTHY:** All right. In St. Croix, none of the wrasses,
46 hogfish, puddingwife, Spanish hogfish, none of them are on the
47 form.
48

1 **WALTER KEITHLY:** In what year?
2
3 **KEVIN MCCARTHY:** Right now.
4
5 **TODD GEDAMKE:** So are we going to go through the form changes
6 now and make a decision on -- I am just asking from the group
7 and I'm just trying to make sure stepwise, because we're going
8 to do this now and then we're going to do it again at another
9 point in time and so I think if we can do -- Like Richard said,
10 there is some that we can actually look at right, like in my
11 mind these, and say this is a reporting issue. If we're going
12 to do that, let's just do it and get those off the table and
13 then come back with the more information on the other ones.
14
15 **GRACIELA GARCIA-MOLINER:** And a recommendation.
16
17 **TODD GEDAMKE:** Does that make sense?
18
19 **KEVIN MCCARTHY:** Wrasses are not currently on the form, clearly.
20 It's nine and seven pounds. There are --
21
22 **JOHN HOENIG:** The ACL is seven pounds?
23
24 **JORGE GARCIA-SAIS:** That's an error that's been carried on and I
25 don't know where that came up.
26
27 **RICHARD APPELDOORN:** It came from the fact that they're not
28 reported and that's what has been -- That was the landings
29 trend.
30
31 **JORGE GARCIA-SAIS:** Right, but how did it ever get approved in
32 this committee as an annual catch limit?
33
34 **RICHARD APPELDOORN:** That was the best available data.
35
36 **JOHN HOENIG:** So you're saying that I could singlehandedly go to
37 St. Croix and create a crisis, an overfishing crisis, just me
38 alone. Imagine if I took my wife. Then it would be an
39 ecological catastrophe.
40
41 **KEVIN MCCARTHY:** All right. Squirrelfish, there are three that
42 are not on the form and let me take a look at --
43
44 **RICHARD APPELDOORN:** There is one that is?
45
46 **KEVIN MCCARTHY:** The longspine. The real question is -- So what
47 are your benchmark years, Bill, for squirrelfish in St. Croix?
48

1 **BILL ARNOLD:** 1999 to 2007, I believe.
2
3 **KEVIN MCCARTHY:** 1999 to 2007. Okay. Squirrelyfish during that
4 time were not on the form and let me check a few other things.
5
6 **TODD GEDAMKE:** For these three, does anyone think or have
7 concern that these represent overages?
8
9 **JOHN HOENIG:** I am worried about the wrasses.
10
11 **TODD GEDAMKE:** I am just saying -- I think from a red-faced test
12 on this --
13
14 **BILL ARNOLD:** Let me comment on the wrasses. Last year, wrasses
15 were -- Their overage was attributed to enhanced reporting.
16
17 **RICHARD APPELDOORN:** How much was the overage last year?
18
19 **TODD GEDAMKE:** 1.3 pounds.
20
21 **BILL ARNOLD:** No, last year I think it was more like 350 pounds
22 reported versus the ACL of seven.
23
24 **TODD GEDAMKE:** That's what I am trying to do with this right
25 now. Like wrasses, let's get rid of them. Squirrelyfish, let's
26 get rid of them.
27
28 **KEVIN MCCARTHY:** Wrasses are not on the form.
29
30 **BILL ARNOLD:** But that's not enhanced reporting. Enhanced
31 reporting is they weren't on the form and now they are and if
32 they weren't on the form and they are still not on the form --
33
34 **KEVIN MCCARTHY:** The pounds are write-ins.
35
36 **BILL ARNOLD:** That's not enhanced reporting. There are probably
37 lots of those.
38
39 **JORGE GARCIA-SAIS:** Maybe before there were no write-ins, Bill,
40 and now there are.
41
42 **TODD GEDAMKE:** You know what, Bill, we will define what enhanced
43 reporting is.
44
45 **GRACIELA GARCIA-MOLINER:** It has to be a difference in reporting
46 or something that --
47
48 **KEVIN MCCARTHY:** All I can tell you is they weren't on the form

1 and they are no longer on the form.
2
3 **TODD GEDAMKE:** If they were on the form and now they're still on
4 the form and if we've done an outreach and education program and
5 people are filling those forms out better, that's enhanced
6 reporting.
7
8 **KEVIN MCCARTHY:** Those are write-ins. That's what that is.
9 That's a write-in.
10
11 **RICHARD APPELDOORN:** Enhanced outreach would be more interest in
12 writing what they caught.
13
14 **JORGE GARCIA-SAIS:** That is probably true.
15
16 **JOHN HOENIG:** I make a motion that we devote the entire meeting
17 to dealing with the wrasse crisis.
18
19 **WALTER KEITHLY:** I second it.
20
21 **JORGE GARCIA-SAIS:** I think that we have -- Seriously, I think
22 that we should recommend that something be done about hogfish,
23 because it's a commercially important fish and at some point --
24 Maybe they have been underreported because it was not on the
25 form, but now that they can write it in and they are still
26 getting it, they are writing it in and it will -- Next time we
27 meet, it's going to be a problem again.
28
29 **RICHARD APPELDOORN:** How many species are on the list in St.
30 Croix?
31
32 **KEVIN MCCARTHY:** How many species are on the form?
33
34 **RICHARD APPELDOORN:** Was it twenty-something?
35
36 **KEVIN MCCARTHY:** Didn't you tell us yesterday it was like
37 twenty-six or something like that?
38
39 **MIKE LARKIN:** St. Croix has forty-five.
40
41 **GRACIELA GARCIA-MOLINER:** No, that are on the form.
42
43 **MIKE LARKIN:** On the form, we have only have twenty-five or
44 twenty-six.
45
46 **RICHARD APPELDOORN:** Hogfish are not that important, because
47 they're not making it on the list to be reported.
48

1 **BILL ARNOLD:** Here is your rationale from last year, Kevin.
2 Quote. Wrasses, however, have not been added to forms in St.
3 Croix or St. Thomas/St. John and so the Southeast Fisheries
4 Science Center concluded that the increase in landings is due to
5 minor improvements in data collection through the reporting of
6 this group as an additional species written in by fishermen. So
7 use that. That's your --
8
9 **KEVIN MCCARTHY:** That's what I basically just said. They are
10 write-ins and some years you get an extra write-in and some
11 years you don't.
12
13 **BILL ARNOLD:** Or even just the tail of an extra write-in.
14
15 **JORGE GARCIA-SAIS:** The problem is not there. The problem is on
16 the ACL. That's where the problem is. If we get rid of that
17 error in the ACL, we are going to come up with the same again
18 and again and again. The ACL is wrong. For problems that arise
19 in the form of reporting, the SSC was led to come up with an ACL
20 that is obviously in error, due to data limitations.
21
22 **WALTER KEITHLY:** Why is it obviously an error?
23
24 **JORGE GARCIA-SAIS:** Because it's half a hogfish. The pounds is
25 half of the hogfish.
26
27 **TODD GEDAMKE:** Reni, I agree it's absurd, but that's not the
28 question in front of us.
29
30 **JORGE GARCIA-SAIS:** But it's going to haunt us until the end.
31
32 **TODD GEDAMKE:** You were a part of when that ACL came in. You
33 were on that committee and --
34
35 **JORGE GARCIA-SAIS:** I don't recall and I surely -- I immediately
36 would have --
37
38 **TODD GEDAMKE:** I agree with you that it's absurd, but --
39
40 **GRACIELA GARCIA-MOLINER:** For squirrelfish, it has been an
41 improvement, because they have --
42
43 **KEVIN MCCARTHY:** Squirrelfish are now -- There is a species,
44 longspine. Longspine squirrelfish and squirrelfish were not on
45 the form during the benchmark years and longspine are now are
46 the form for trap and spear or by hand.
47
48 **SHANNON CALAY:** Angelfish, is that --

1
2 **KEVIN MCCARTHY:** Angelfish, as angelfishes, were on the form,
3 and so these are fishing years, in 1995-1996, 1996-1997, 1997-
4 1998, and 1998-1999. For any of those years -- That is how you
5 got some number and then they were off the form and what species
6 are we talking about?
7
8 **GRACIELA GARCIA-MOLINER:** French and gray.
9
10 **RICHARD APPELDOORN:** I am seeing very specific numbers here for
11 recent years.
12
13 **KEVIN MCCARTHY:** Gray angel is now on the form and since the
14 middle of 2011. The same with French and so for part of your
15 benchmark years, but not all, angelfishes were on the form and
16 now you have two specific species that are on the form for trap,
17 spear, or by hand. They are on -- In St. Croix, there is just
18 the one form.
19
20 **MIKE LARKIN:** Queen angelfish was never on it, right,
21 specifically for that one? That's also included with that ACL.
22
23 **KEVIN MCCARTHY:** Queen angel? Let me see. Queen angelfish are
24 also on the form. You've got three species. Are there any
25 other angelfish?
26
27 **MIKE LARKIN:** Those are the three, queen, gray, and French.
28
29 **KEVIN MCCARTHY:** They're all on the form and so, in my mind, do
30 you have a whole bunch of zeroes or very low write-ins for part
31 of your time period? Prior to that, angelfishes were on the
32 form, but not for the whole timeframe. Now they are on the
33 form, all three species, and you all can -- What did we say
34 before, Bill, about angelfish?
35
36 **BILL ARNOLD:** Angelfish and squirrelfish have been added to the
37 form and wrasses were due to enhanced write-ins. I mean you can
38 take that paragraph right out of last year's memo.
39
40 **KEVIN MCCARTHY:** And I will.
41
42 **TODD GEDAMKE:** Done.
43
44 **GRACIELA GARCIA-MOLINER:** Okay. Next is St. Thomas.
45
46 **KEVIN MCCARTHY:** Was the same true for St. Thomas and nothing
47 has changed?
48

1 **BILL ARNOLD:** Nothing has changed.
2
3 **RICHARD APPELDOORN:** No and the amounts that they're harvesting
4 are not any different than what they were doing before and so if
5 you care about 3,000 percent overages, that's what they've been
6 doing.
7
8 **GRACIELA GARCIA-MOLINER:** So St. Thomas is done.
9
10 **KEVIN MCCARTHY:** If those are the only three that were over.
11
12 **RICHARD APPELDOORN:** Does anybody know why squirrelfish are on
13 the list?
14
15 **GRACIELA GARCIA-MOLINER:** For St. Croix? Because they --
16
17 **RICHARD APPELDOORN:** The landings are way, way down the list on
18 their species of importance and it seems to me if we're going to
19 take space on the form that we ought to be getting something
20 that we really need the information for.
21
22 **GRACIELA GARCIA-MOLINER:** What years are you looking at?
23
24 **RICHARD APPELDOORN:** I am looking at 2012 and 2013.
25
26 **KEVIN MCCARTHY:** Look at squirrelfish for either one of the
27 Virgin Islands. The mean landings across the three are -- It's
28 9,400 pounds in St. Thomas and I don't know where that
29 determines everything else, but --
30
31 **RICHARD APPELDOORN:** In the first two years, the longspine
32 squirrelfish was 582 and 490 and so it must be the rest of --
33
34 **GRACIELA GARCIA-MOLINER:** For St. Croix?
35
36 **KEVIN MCCARTHY:** In St. Croix, it's 458 pounds and so one
37 wonders if --
38
39 **MIKE LARKIN:** For St. Croix, they have a very low ACL, right,
40 121? Yes.
41
42 **KEVIN MCCARTHY:** Puerto Rico is going to be more problematic. I
43 don't think it's something we can just look at and say it was on
44 the form or it wasn't on the form. I think that's going to
45 require some digging on my part and it could involve the
46 expansion factors and it could involve, as you're saying, the
47 effort has shifted around to new areas.
48

1 They had some trouble with putting together the expansion
2 factors for 2014 and so it could be coming out of that, although
3 those are not species-specific expansion factors, but maybe if
4 they were close.

5
6 **GRACIELA GARCIA-MOLINER:** The Snapper Unit 2, there is a number
7 of issues with that.

8
9 **KEVIN MCCARTHY:** If you remember what all those issues are, send
10 me an email so I can investigate.

11
12 **GRACIELA GARCIA-MOLINER:** Do you want to say anything about
13 parrotfish or spiny lobster?

14
15 **JORGE GARCIA-SAIS:** That problem is small this time. It's going
16 to increase. Every year that's going to be worse.

17
18 **TODD GEDAMKE:** Kevin, your comments apply to this too, the same
19 thing in Puerto Rico? Just you've got to do digging for us to
20 really --

21
22 **KEVIN MCCARTHY:** Puerto Rico is not straightforward. Things
23 would have been on the forms and so that's -- It's not that
24 simple. I am going to have to investigate.

25
26 **TODD GEDAMKE:** I agree.

27
28 **JORGE GARCIA-SAIS:** Does that spiny lobster have an expansion?

29
30 **KEVIN MCCARTHY:** In Puerto Rico, all species have an expansion
31 factor.

32
33 **BILL ARNOLD:** Commercial.

34
35 **RICHARD APPELDOORN:** We certainly have the situation, both with
36 the queen snapper fishery and the lobster fishery, when we have
37 a case where you have a set group of individuals who are being
38 dealt with for whatever kinds of programs -- For queen snapper,
39 we have the limited entry and probably a group that is very
40 concerned about protecting their resource. They have worked
41 hard to clean up who was in it and the data that's being
42 reported.

43
44 If their, as a consequence, being more conscientious about
45 reporting their data than the fishery on the west coast as a
46 whole, they get screwed by the expansion factor.

47
48 If the lobster fishery on the east coast is being dealt with in

1 this program and they are now more engaged and they are
2 reporting more because of that, they get screwed by the
3 expansion factor and that's just life, but we're going to have
4 to make some determinations, because that's how they do the
5 expansion factors. We're going to have to deal with that one
6 way or the other and so if we think that there's a grounds for
7 saying that there's enhanced reporting because they're
8 interacting more with the agency and getting better buy-in, I
9 guess that's going to be our call, but that's one of the issues.

10
11 Is the expansion factor different when you start looking at
12 individual species and how they are fished by a more specialized
13 group of fishermen versus fishermen as a whole?

14
15 **JORGE GARCIA-SAIS:** Is the approach for calculating the
16 expansion factor the same as in previous years and based on the
17 amount of fishermen that reported versus the total number of
18 licenses or something like that?

19
20 **KEVIN MCCARTHY:** That has changed.

21
22 **RICHARD APPELDOORN:** That has changed, but that changed some
23 time ago.

24
25 **JORGE GARCIA-SAIS:** So how do they do it now? Those numbers are
26 based on what approach for calculating an expansion?

27
28 **KEVIN MCCARTHY:** What they will do -- I don't know exactly how
29 they select the site or the day, but they've got two periods of
30 a couple of weeks each, separated by say two months, and they
31 will have port samplers go out to a particular site on a
32 particular day and they will weigh catches of everybody that
33 comes in, so they know the boats and they know what they had as
34 their catch.

35
36 Then they wait to see what proportion of that was reported on
37 the logbook forms. Then they've got what actually happened at a
38 site for a day and what was actually reported and that's how
39 they develop their expansion factors, but what they will do is
40 they will collapse that across species and they will collapse
41 that across the entire region, so you don't have a bunch of
42 expansion factors that are species-specific or landing-site
43 specific. You get north, south, east, and west coast, one
44 expansion factor for all species.

45
46 **MIKE LARKIN:** They cross it by year too and is that right?

47
48 **KEVIN MCCARTHY:** Yes, it's a year-specific thing. They will go

1 out and they will do it --
2
3 **RICHARD APPELDOORN:** But they don't do it every year. Sometimes
4 we have had years --
5
6 **KEVIN MCCARTHY:** Right. They try and do it every year. The
7 goal is to do it every year, but if they have funding problems
8 or something like that, then -- There's been a couple of times
9 where that happened.
10
11 **JORGE GARCIA-SAIS:** It's north and south and east and west and
12 so it's four expansion factors?
13
14 **KEVIN MCCARTHY:** Four expansion factors.
15
16 **JORGE GARCIA-SAIS:** Then they integrate the poundage by region
17 for that expansion factor and that's what we have here?
18
19 **KEVIN MCCARTHY:** Correct.
20
21 **RICHARD APPELDOORN:** Right and it's not without problems. I
22 assume you all remember that the east coast 2005 expansion
23 factor blew everything up and we complained about it, but we
24 never had another expansion factor to replace it, but -- That
25 drove up the landings in Puerto Rico as a whole. It's all
26 driven by the east coast expansion factor and so I don't think
27 anyone really thinks that was real, because the next year it
28 went back down to kind of the same levels it had been the year
29 before, but that was the nature of the data.
30
31 **JORGE GARCIA-SAIS:** So it would be a matter of going towards --
32 I mean focus the analysis on the side of the island that
33 essentially is causing the problem, right, or the overage?
34
35 **RICHARD APPELDOORN:** Yes and so that's -- When we're talking
36 about what would we like to see for that fishery, if it's a
37 reporting thing and it's the east coast that's going through
38 this process of dealing with introducing a new trap design or
39 things like that, we would want to see whether that problem is
40 different for the east coast versus the other coasts. If it
41 sticks out, then that might be indicative of a reporting issue.
42
43 **KEVIN MCCARTHY:** One part of the reason there was a delay in
44 getting these expansion factors is that they had a problem, I
45 think in Fajardo, where -- So they sent folks out and they
46 supposedly interviewed every boat that came in and weighed the
47 catch and then waited to see, okay, who is reporting and they
48 got more reports than they had interviews, which shouldn't

1 happen.

2
3 That was a problem and I don't know how they have resolved it.
4 I am not certain how they resolved it and so that needs further
5 explanation by me, to talk to Daniel and find out what went on.
6 I think that Josh in our lab has spoken with Daniel and has a
7 much better handle on what was going on and so that little bit
8 that I just told you is what I remember from a conversation I
9 had with Josh and so I haven't spoken to the source yet.

10
11 **RICHARD APPELDOORN:** The other side of the coin is that you have
12 a program now that's trying to enhance the efficiency and reduce
13 the bycatch, but they're also being given traps and that could
14 just result in more fishing and it definitely --

15
16 **GRACIELA GARCIA-MOLINER:** I don't know if all that data goes to
17 the commercial catch reports or if that's kept separate. I
18 think it goes into the commercial catch, because the idea is
19 that they would switch from the old traps that they were using
20 to the new traps and concentrate on lobster rather than fish.
21 That was presented at the council meeting last August, because
22 that's coming to an end.

23
24 **KEVIN MCCARTHY:** So by program, is this a research fishery or is
25 this a special fishery or are these guys just offered the
26 opportunity to test these traps?

27
28 **GRACIELA GARCIA-MOLINER:** No, the traps aren't tested. They are
29 just switching from what they -- The traps they used to use to
30 these new traps.

31
32 **KEVIN MCCARTHY:** Okay and so they have just -- It's just a gear
33 shift. It's just a change in gear.

34
35 **GRACIELA GARCIA-MOLINER:** It's supposed to be more effective and
36 it's supposed to be --

37
38 **KEVIN MCCARTHY:** All of that is all well and good, but it's
39 still part of the fishery. It's not a separate research
40 program.

41
42 **GRACIELA GARCIA-MOLINER:** It might be adding additional effort
43 to the fishery and that's what I am -- These are the issues and
44 if they are reporting better from all the new traps, then that
45 is also --

46
47 **KEVIN MCCARTHY:** Yes, but that's just a gear efficiency change.
48 I mean you all would have to decide, but in my mind, it's better

1 fishing and you've got to plan accordingly.
2
3 **RICHARD APPELDOORN:** There is the issue of whether it's
4 important.
5
6 **KEVIN MCCARTHY:** Right and that information I don't have. I
7 mean if you all are privy to knowing that the reporting by the
8 individual fishermen has improved, then that's something you all
9 will have to to weigh in on. I don't know that. I don't doubt
10 it, but I have no knowledge of it.
11
12 **RICHARD APPELDOORN:** The only way I think you're going to look
13 at that would be to compare the number of lobster trips that are
14 going on the east coast over the other coasts that are not doing
15 this program and if you see an uptick on the east coast and not
16 on the other coasts, then we can look and see if that's
17 reporting of those trips or coming in and going out fishing
18 more.
19
20 **KEVIN MCCARTHY:** You're adding that to the notes you're sending
21 me?
22
23 **GRACIELA GARCIA-MOLINER:** I already have it.
24
25 **KEVIN MCCARTHY:** I can certainly look and see.
26
27 **RICHARD APPELDOORN:** If they're doing the same number of trips
28 and they're catching more lobster, then that's an efficiency
29 issue.
30
31 **KEVIN MCCARTHY:** Correct and so we need to look at -- I mean if
32 it gets to be a little tricky --
33
34 **RICHARD APPELDOORN:** We may not be able to answer this, in which
35 case we're probably stuck saying it's an overage, because there
36 will be no basis for saying it's anything else.
37
38 **KEVIN MCCARTHY:** Right, especially -- I think that I hear this
39 is true in Puerto Rico as well as in the Virgin Islands, but
40 particularly for things like lobster, they will get an order --
41 I think we talked about this earlier. They will be told we want
42 200 pounds of lobster and so that's what they will bring in.
43 Then you don't know are they more efficient? It's hard to tell,
44 because they always get orders for 150 or 200 pounds and it's
45 not everything that they caught and so it can be a little
46 tricky, but I will look at the data.
47
48 **RICHARD APPELDOORN:** If you're filling from orders, that's --

1
2 **KEVIN MCCARTHY:** Right and so unless there are other specific --
3
4 **RICHARD APPELDOORN:** Going back to -- What was the date closure
5 for the lobster?
6
7 **GRACIELA GARCIA-MOLINER:** November 12.
8
9 **RICHARD APPELDOORN:** That's a month and a half and if that's
10 driven just by the east coast, the rest of Puerto Rico is paying
11 for that.
12
13 **GRACIELA GARCIA-MOLINER:** That's what we need to find.
14
15 **RICHARD APPELDOORN:** Well, there's no way around that problem.
16
17 **GRACIELA GARCIA-MOLINER:** These closures only apply to the EEZ.
18
19 **RICHARD APPELDOORN:** That's probably not a big deal for lobster.
20
21 **GRACIELA GARCIA-MOLINER:** The only other thing, and I don't know
22 the answer to this, is if there is any changes in the fishery
23 off the west coast, because remember that they were using nets
24 or something like that to harvest?
25
26 **RICHARD APPELDOORN:** On the date closures -- Bill, on the date
27 closures, are they driven by having to make up the difference by
28 what is expected of the catch in the EEZ or just --
29
30 **GRACIELA GARCIA-MOLINER:** It's federal catch.
31
32 **RICHARD APPELDOORN:** But the closure only applies to the EEZ?
33
34 **GRACIELA GARCIA-MOLINER:** Yes.
35
36 **JORGE GARCIA-SAIS:** That's a one-day closure or a period or --
37
38 **BILL ARNOLD:** That's when it starts.
39
40 **GRACIELA GARCIA-MOLINER:** It starts the 12th of November and runs
41 until December 31.
42
43 **RICHARD APPELDOORN:** So the EEZ would be closed for lobster
44 during that time.
45
46 **KEVIN MCCARTHY:** Is there a particular lobster season? It's
47 open year-round?
48

1 **GRACIELA GARCIA-MOLINER:** Yes.
2
3 **KEVIN MCCARTHY:** Unless there are more or additional specific
4 questions or issues that I should be looking at in Puerto Rico
5 to get at this potential increased or improved reporting, I
6 think that's all we can do with it, until I have a chance to
7 look at the data, but I am happy to entertain other notions if
8 you think it will be productive.
9
10 **BILL ARNOLD:** One thing you might want to consider is do you
11 want to make a recommendation to the council to delay this
12 decision until you have had time to fully evaluate the data and
13 -- I am just putting this out for thought.
14
15 Then request the council to schedule a telephone or emergency or
16 whatever meeting and all of those things that go into delaying
17 the decision on enhanced reporting until February or something.
18
19 **KEVIN MCCARTHY:** For me, that would -- I mean you mean the
20 recommendation out of this group?
21
22 **GRACIELA GARCIA-MOLINER:** Yes, because the SSC would have to
23 review that to make the final recommendation. I mean you write
24 your own memo, because the way that it's set up, the SSC is
25 supposed to confer with the Southeast Fisheries Science Center
26 to make the recommendation.
27
28 **KEVIN MCCARTHY:** Yes, I think that's an excellent idea, if the
29 SSC will entertain that.
30
31 **BILL ARNOLD:** If the council will entertain it too, but it won't
32 happen if you don't ask.
33
34 **KEVIN MCCARTHY:** Right. I mean I think we have an answer for
35 the Virgin Islands.
36
37 **BILL ARNOLD:** I think you should tell them that. Say this is
38 only for Puerto Rico and you should deal with this -- It's just
39 a suggestion, but you should deal with Puerto Rico recreational
40 jacks and decide if the recreational overage is going to be part
41 of this or not, because you have only dealt with Puerto Rico
42 commercial so far. You've got that jacks sitting out ahead for
43 the recreational fishery. That's the earliest closure. That
44 closes in June.
45
46 **KEVIN MCCARTHY:** I don't know an awful lot about MRFSS, but you
47 know their -- It's a survey. I think that that's -- You know
48 unless the survey got better --

1
2 **BILL ARNOLD:** It is what it is.
3
4 **KEVIN MCCARTHY:** Right and unless the survey got better.
5
6 **BILL ARNOLD:** All I'm suggesting is you focus this down as much
7 as you can and say this is all we want time on, to focus on
8 these Puerto Rico commercial issues and whether there is --
9
10 **KEVIN MCCARTHY:** That's all I want time on. We have to get
11 Vivian's thoughts on the recreational stuff, because she knows
12 the data.
13
14 **GRACIELA GARCIA-MOLINER:** Those are the ones that are reported
15 in MRFSS.
16
17 **MIKE LARKIN:** Yes and those are just all the jack species that
18 were included. It's horse-eye jack, blackjack, almaco jack, bar
19 jack, greater amberjack, and yellow jack. Richard was asking
20 about that.
21
22 **KEVIN MCCARTHY:** This is the suite of species that went into --
23
24 **MIKE LARKIN:** The jacks ACL landings. The jacks complex is what
25 we've been calling it.
26
27 **BILL ARNOLD:** Make that specific to commercial, Graciela.
28
29 **RICHARD APPELDOORN:** We also have recreational parrotfish and
30 the Snapper Unit 2 as well and that's recreational.
31
32 **GRACIELA GARCIA-MOLINER:** If you want to recommend to the
33 council to choose some of the ACLs for the commercial and
34 recreational --
35
36 **JORGE GARCIA-SAIS:** Recreational jacks for Puerto Rico?
37
38 **GRACIELA GARCIA-MOLINER:** The ones that were over, yes.
39
40 **JORGE GARCIA-SAIS:** That's a good one.
41
42 **RICHARD APPELDOORN:** The Snapper Unit 2 is over in recreational.
43
44 **JORGE GARCIA-SAIS:** A closure for the recreational is not --
45
46 **GRACIELA GARCIA-MOLINER:** The overage is from the commercial.
47
48 **RICHARD APPELDOORN:** I am looking at the 2010 recreational

1 things and there is is a -- It was under?
2

3 **GRACIELA GARCIA-MOLINER:** Yes and it only took 10 percent of the
4 total ACL.
5

6 **RICHARD APPELDOORN:** Okay. Is there an issue with triggerfishes
7 or filefishes?
8

9 **GRACIELA GARCIA-MOLINER:** My only concern was if it there was
10 being better reporting off the east coast of Puerto Rico,
11 because of all the problems that are going on on the east coast.
12

13 **RICHARD APPELDOORN:** Spillage from other programs? Besides the
14 lobster, what else is going on?
15

16 **GRACIELA GARCIA-MOLINER:** Educational programs and the MRIP and
17 the --
18

19 **RICHARD APPELDOORN:** Are those any different than the other
20 coasts? Is there something special about the east coast? There
21 is for lobster and we've identified that, but if you're talking
22 about enhanced something for all of -- Why would it affect
23 triggerfishes and not lots of other things?
24

25 **KEVIN MCCARTHY:** Right and those kinds of questions about what
26 might be happening in the attitudes of fishermen or their
27 willingness to report, or more accurately report, I don't have
28 any clue. I mean you could talk to the local guys and they
29 might know better.
30

31 **RICHARD APPELDOORN:** We're talking about there are reasons to
32 say Snapper Unit 2 and in lobster you're dealing with fishermen
33 who fish those things.
34

35 **KEVIN MCCARTHY:** Yes and in that case, I agree.
36

37 **RICHARD APPELDOORN:** There are regional things going, special
38 programs, that might affect the reporting and/or the catch
39 rates, but triggerfishes and filefishes -- You know no one has
40 identified anything that -- You know if it's enhanced reporting
41 because of all the activities, all of the species groups should
42 be affected by that, if that's the general trend. We have
43 sargassum, but that's still a catch, isn't it?
44

45 If anybody can -- Unless somebody can come up with an issue that
46 somehow can be explored by looking at the data, I am saying
47 triggerfishes and filefishes are an overage, for whatever
48 reason. Now, we can certainly explore the data to find out

1 what's driving it, but we wouldn't still have a basis of saying
2 that it's not an overage.
3
4 **BILL ARNOLD:** Separately, you discussed the idea of
5 reconsidering your control rule for these separation of
6 commercial and recreational sectors. The way it's structured, I
7 assume you would want a separate recommendation to the council.
8
9 **RICHARD APPELDOORN:** My recommendation on that would be that's
10 going to come up in the new plans.
11
12 **BILL ARNOLD:** Sure.
13
14 **RICHARD APPELDOORN:** Should we decide to do that. So is there
15 an issue that we could ask to be looked at relative to Snapper
16 Unit 2 in the recreational catch?
17
18 **GRACIELA GARCIA-MOLINER:** The change in the control rule to add
19 the commercial and -- They have only taken 7 percent of the
20 total, of the 34,000 pounds.
21
22 **RICHARD APPELDOORN:** Right and so it's jacks was the overage in
23 the recreational catch. Is there something that anybody can
24 think of that would suggest there is nothing but an overage?
25 That would be anything that would drive a reporting change for
26 jacks.
27
28 **MIKE LARKIN:** I would like to confer with Vivian, but --
29 Actually, give me one second and let me double check. They went
30 over -- I was just looking at each year here and the specific
31 overage and so they went over in 2012 and 2013 and jacks was
32 under the ACL and then in 2014 it was over, but I would like to
33 confer with Vivian and the Science Center, but I believe there
34 was changes in 2014 to the survey. I might be wrong, Kevin, but
35 I thought that they did switch and they started like the MRIP
36 conversion in 2014.
37
38 **KEVIN MCCARTHY:** I don't know about that specifically, but there
39 have been changes in the vendors, for example, which may have
40 resulted in survey changes. We might check, but --
41
42 **MIKE LARKIN:** But even that, they went over in 2012 and in 2014
43 and so even if there were changes --
44
45 **KEVIN MCCARTHY:** You would kind of expect across the board and
46 maybe not everything would go over, but you would have to look,
47 I would think, at -- If there was some systematic change, you
48 would expect to see changes across the board and whether or not

1 they all ended up over would be one thing, but you would expect
2 to changes across at least the major species, I would think.
3 She would have to look at that.

4

5 **MIKE LARKIN:** Let me email her and see what she says.

6

7 **RICHARD APPELDOORN:** Are we prepared to report to the council
8 that we think jacks is an overage for the recreational fishery,
9 because if we don't think there's a reason why it wouldn't be,
10 or do we want the Science Center to look at it and see if
11 something pops up? I kind of feel uncomfortable doing that,
12 because that's just like saying every time something comes up to
13 go see if there's something that could be going on, but in the
14 other ones we have rationales to think there might be something
15 going on.

16

17 **JORGE GARCIA-SAIS:** I think, Richard, that there is a reality in
18 Puerto Rico and that is that the fishery in Puerto Rico is
19 increasing. Right now, the latest thing in Puerto Rico
20 fisheries is the kayak fisheries. There is an incredible amount
21 of -- If you look at the internet, there is about twelve new
22 clubs of kayak fishermen in Puerto Rico. They are everywhere
23 and they are fishing. They are fishing a lot.

24

25 Because they go out to the shelf edge and they go out -- They
26 just don't fish from the shore. You know they go out and it's
27 like -- They go out and they go fishing and there is even videos
28 of these kayak fishermen fishing sharks and fishing marlin and
29 fishing dorado and fishing everything.

30

31 Go to West Marine and they even have people that will set you up
32 with the club and everything for kayak fisheries, kayak fishing,
33 and so I believe that the recreational fishing is on the rise
34 and jacks are the easiest fish to catch and that's probably the
35 first reflection of a trend that might include other species in
36 the future.

37

38 **KEVIN MCCARTHY:** So jacks are important to picking up the trend?
39 I agree with you.

40

41 **JORGE GARCIA-SAIS:** Yes, especially the blue runners. Those
42 blue runners, they hit on everything.

43

44 **TODD GEDAMKE:** We approved the list yesterday and that doesn't
45 have the jacks on it for management.

46

47 **JORGE GARCIA-SAIS:** Remember that we left them out because they
48 are mostly inshore.

1
2 **JOE KIMMEL:** The kayakers aren't going nine miles out, I don't
3 think.
4
5 **KEVIN MCCARTHY:** Just the tough ones. The real kayakers are.
6
7 **JORGE GARCIA-SAIS:** Not that that the jacks that are inshore are
8 not going offshore, because those things are everywhere.
9
10 **RICHARD APPELDOORN:** To close out then, we are reporting to the
11 council that we think the overage in jacks in the recreational
12 fishery is real, or at least not due to a reporting issue.
13
14 **JORGE GARCIA-SAIS:** Richard, what Todd says brings a very
15 interesting point and that is that we left jacks out because
16 they are an inshore species, but we are now facing an overage
17 caused by a catch that does not occur in the EEZ, but occurs
18 mostly inshore. We are contradicting ourselves and you are
19 right in that.
20
21 **RICHARD APPELDOORN:** Are we?
22
23 **JORGE GARCIA-SAIS:** Yes, because we're saying we don't have to
24 manage the jacks, because those are the inshore species.
25
26 **RICHARD APPELDOORN:** Right.
27
28 **JORGE GARCIA-SAIS:** Now we are facing an overage and running
29 over an overage of a fishery that the great amount, probably 90
30 percent of it, didn't occur in the EEZ, but occurred in state
31 waters.
32
33 **RICHARD APPELDOORN:** Then that's the same thing. They're
34 occurring in state waters and it's a state problem and not a
35 council problem.
36
37 **JORGE GARCIA-SAIS:** Okay and so then why do we have an overage?
38
39 **RICHARD APPELDOORN:** Because right now they're included and
40 until we have these plans in, this is where we are.
41
42 **JOE KIMMEL:** They will still be able to fish jacks inshore.
43
44 **RICHARD APPELDOORN:** That's right. It's only the EEZ that gets
45 closed.
46
47 **JORGE GARCIA-SAIS:** It's going to be hard to prove that if you
48 come to the dock or to the fisheries whatever with a jack --

1 It's going to be difficult to show that it's not from the EEZ.

2
3 **GRACIELA GARCIA-MOLINER:** The only thing that's going to happen
4 regarding enforcement is that if you are fishing in the EEZ and
5 the U.S. Coast Guard or law enforcement or the swat team or
6 whoever it is from the DNER comes over and you have jacks in
7 your boat in the EEZ and you are a recreational fisher, then you
8 are breaking the law.

9
10 **JORGE GARCIA-SAIS:** Okay. That's better.

11
12 **JOE KIMMEL:** Every one that lands at the dock will be caught
13 inshore, no matter what.

14
15 **RICHARD APPELDOORN:** You're talking about -- You're going for
16 nine nautical miles offshore that would be outside the EEZ.
17 This would be a good time to break for lunch. Be back at 1:30,
18 people.

19
20 (Whereupon, the meeting recessed for lunch on December 9, 2015.)

21
22 - - -

23
24 December 9, 2015

25
26 WEDNESDAY AFTERNOON SESSION

27
28 - - -

29
30 The Scientific and Statistical Committee of the Caribbean
31 Fishery Management Council reconvened at the CFMC Headquarters,
32 San Juan, Puerto Rico, Wednesday afternoon, December 9, 2015,
33 and was called to order by Chairman Richard Appeldoorn.

34
35 **RICHARD APPELDOORN:** Let's get started again. The next item on
36 the agenda is the SEDAR-46 U.S. Caribbean Data-Limited Species
37 Workshop Review.

38
39 **SEDAR-46 U.S. CARIBBEAN DATA-LIMITED SPECIES WORKSHOP REVIEW**

40
41 **SHANNON CALAY:** I would like to at least introduce the
42 application of data-limited methods and this is essentially the
43 process we're using for SEDAR-46, which is currently in progress
44 and many of you were at that meeting.

45
46 In this presentation, I used materials provided by Nancie
47 Cummings, Skyler Sagarese, and Tom Caruthers. Without their
48 approval, I listed them as coauthors, because they did provide a

1 number of materials which made it into this presentation and so
2 I wanted to acknowledge their unknowing participation.

3
4 The objectives of this presentation are to review the SEDAR-46
5 terms of reference and project schedule; to introduce the
6 application of the DLM toolkit, and DLM just means data limited
7 methods; overview of the typical results that result from these
8 DLM methods; some of the diagnostics we would use to determine
9 whether the results are robust; how we would incorporate or how
10 we would address scientific uncertainty and sensitivity to
11 assumptions; and how we would use DLM results in a management
12 context to develop management advice. The materials for SEDAR-
13 46, the reports, data triage reports, et cetera, are available
14 on the website that I have cited here.

15
16 We have actually done a variety of SEDAR assessments of
17 Caribbean stocks in the past and typically we have used mean
18 length estimators for those SEDAR assessments and those
19 assessments, while they were often accepted by the review
20 workshop as best available science, were not used directly to
21 develop management advice in the U.S. Caribbean and, in general,
22 I believe that that was because they cannot, or did not at that
23 time, produce estimates of OFL or ABC and there are extensions
24 which do allow mean length estimates to produce OFL and ABC and
25 so now they are also included in the framework of DLM methods
26 and they were also examined during SEDAR-46. They are not in
27 the DLM toolkit, though we did use them as another data-limited
28 approach.

29
30 The throughput for SEDARs was considered unacceptable in
31 general, I think, by the Caribbean Council and the problem was
32 we were only able to do one to three stocks per year using the
33 formal approach, the former approach, and so in response to that
34 perception that throughput was unacceptable and we could not
35 produce management advice at the time, or we had not, the
36 Southeast Center proposed a revised approach to the Caribbean
37 Council, which was to use this DLM toolkit to essentially go
38 through a larger number of stocks on a much shorter project
39 schedule and to see if this could become an operational way of
40 conducting stock assessments in the U.S. Caribbean. This was
41 our first attempt to go through that DLM process.

42
43 Advantages of this process are that it's extremely flexible.
44 One set of input files per species or stock is created and that
45 one set of input files can be used to examine most of the
46 plausible data-limited methods. We did have to create separate
47 data files for our mean length estimators, because they are not
48 currently in the toolbox.

1
2 These approaches can produce the required management metrics,
3 for example OFL and ABC. They are automated and they contain --
4 The package has tools which allow you to evaluate model
5 performance and so automated tools for bias, robustness, and
6 sensitivity are available.

7
8 The process is quite fast. In this first go-round, we were able
9 to produce preliminary analyses of six stocks and the throughput
10 could increase as data provision tools become more automated and
11 so if we were to move forward with this sort of methodology, we
12 would hopefully improve our ability to create the data we need
13 more rapidly and if that occurred, we could, theoretically,
14 increase throughput. These are very easily updated once an
15 operating model is accepted. It could be maintained and
16 annually updated, potentially.

17
18 I wanted to go through just briefly the terms of reference for
19 SEDAR, just so that we're all aware of what was required of us
20 and what the role of the SSC is for this process.

21
22 For the data workshop, which actually occurred in November and
23 some of you were there, we reviewed the results of the data
24 triage exercise that was conducted by the Science Center. We
25 discussed and recommended which species were suitable for
26 evaluation and we applied various data-limited modeling
27 techniques and we provided at least provisional management
28 advice and we are in the process currently of preparing a
29 workshop report which provides complete documentation of those
30 activities.

31
32 **RICHARD APPELDOORN:** Shannon, in terms of the triage, yes, the
33 group was presented those, but a lot of material about what
34 species have what data and what could we possibly do to that,
35 but I just wanted the group to know that the ones that we
36 actually picked to look at went after a range of species to see
37 basically, okay, does it work on the really good stocks and does
38 it work on the marginal ones and is there something -- You know
39 kind of exploring just the bottom of everything to expect that
40 these tools might work out and so we weren't just taking the
41 cream of the crop.

42
43 **SHANNON CALAY:** So we actually did choose a few potentially for
44 which we thought the data was actually fairly poor. Now, the
45 review workshop is actually going to be conducted February 23 to
46 25 in Miami and the terms of reference for that review workshop,
47 and I wanted to make sure this is understood, is to thoroughly
48 evaluate the data that's actually used in these assessment

1 models and that is the appropriateness of the data and whether
2 it was actually applied correctly in the stock assessment model.
3 It's a pretty thorough evaluation of data quantity, quality, and
4 use.

5
6 To evaluate and discuss the strengths and weaknesses of the
7 methods and that I will get into a little more later and to to
8 evaluate how scientific uncertainties were addressed in the
9 assessment procedure and to consider any research
10 recommendations that were made and make additional
11 recommendations as warranted. To consider whether the stock
12 assessment constitutes the best available scientific information
13 and to prepare another report summarizing the panel evaluation.

14
15 It has been the practice of SEDAR to conduct the review workshop
16 with Center for Independent Expert participation as well as SSC
17 participation and I know some of you have already been
18 identified as reviewers for that process, but it has also been
19 the practice of these SEDARs that are conducted in the Gulf for
20 the full assessment to come back to the SSC to be presented
21 after the report is ready and for the SSC to make a formal
22 determination of whether the stock assessment is the best
23 available science and whether it's useful for management. There
24 is still an SSC role, even following the review workshop, at
25 least by customary practice.

26
27 The project schedule, we did have the data and assessment
28 workshop in San Juan on November 2 through 6. Our first
29 assessment webinar has actually been rescheduled because it
30 conflicted with this meeting and so it will be held on December
31 14 and if you want to participate, I can tell Julie Neer. It is
32 an open and transparent meeting and so if you want to
33 participate, it's a webinar and it can be arranged.

34
35 **GRACIELA GARCIA-MOLINER:** She is online.

36
37 **SHANNON CALAY:** Yes, online.

38
39 **BILL ARNOLD:** That says the 7th, Shannon.

40
41 **SHANNON CALAY:** It says the 7th, but because it conflicted with
42 this meeting, it was rescheduled for the 14th. We have to have
43 our assessment report draft due on January 13. It is reviewed
44 at the review workshop by the CIE and SSC reviewers and then we
45 have another report writing month, essentially, and the complete
46 assessment report is due on March 28. After that time, we would
47 be prepared to present it to the SSC.

48

1 For the data triage exercise, in general we examined the
2 following sorts of data, the commercial landings and there was a
3 paper about commercial reporting compliance and recreational
4 landings and the TIP information, length frequency in
5 particular, and fishery-dependent effort, or catch per unit
6 effort, life history information.

7
8 There was a survey of anglers and we discussed with them
9 fisheries operations and targeting and selectivity, amongst
10 other topics, and we also made available the fishery-independent
11 workshop report, which kind of went over the sources of
12 information from fishery-independent sampling.

13
14 After we considered the data, which I don't want to elaborate on
15 right now, because it's voluminous, we chose six stocks, five
16 species and six stocks, and so St. Thomas queen triggerfish, St.
17 Thomas spiny lobster, St. Croix spiny lobster and stoplight
18 parrotfish, Puerto Rico hogfish and yellowtail snapper.

19
20 I think that Rich would agree with me that stoplight parrotfish
21 was chosen to find out if these methods failed at some point, if
22 the data becomes unreliable enough that we can't just can't
23 proceed with these methodologies. That was our most data-poor,
24 I believe, of these stocks.

25
26 **RICHARD APPELDOORN:** Yes and hogfish would probably be second.

27
28 **SHANNON CALAY:** Yes and so now I'm showing you this because I
29 stole some of their graphics and so this from David Newman and
30 Tom Caruthers, et cetera, and it contains some of the same
31 graphics that I am going to show you and some discussion of
32 data-limited approaches in general.

33
34 Basically, data-limited approaches are used throughout the
35 United States, in every jurisdiction and every regional
36 management council. In general, the west coast approaches tend
37 to be more on the data moderate side and so those approaches
38 actually really have data that could be used in another -- Like
39 a data-rich stock assessment framework.

40
41 The approaches that are used in the Southeast Region are all
42 catch scalars at the moment or their ABC equals zero and so
43 they're in a different category. They are not DB-SRA and DCAC
44 necessarily, but they are more not caught.

45
46 70 percent of ABCs in the U.S. are actually determined by data-
47 limited methods and every data-limited stock in the Southeast
48 U.S. is currently established using the data-limited approach,

1 because recent landings history alone is considered a data-poor
2 limited approach in this context.

3
4 This is our table that Graciela requested and I don't want to go
5 through it in enormous detail, but you will see the
6 methodologies listed on the left-hand side and the document that
7 we're actually preparing contains some information about these
8 methodologies, but there is fifty-seven of them and it's far too
9 much information to get into, but what you have on the top are
10 all of the parameters that are essentially needed to estimate
11 these approaches.

12
13 The gray-colored cells are data that is required for that
14 approach and all the empty cells, that data is not required for
15 that approach and so you see on a catch-based that average catch
16 is listed as a data-limited method and all it requires is catch
17 and so that's what we're doing here, essentially. It goes on
18 and so you see that most of these approaches do not require --
19 You know they certainly don't require the full suite of
20 parameters and there is fifty-seven of them when we prepared
21 this table. There may be more already. How do we actually
22 apply these approaches?

23
24 **VANCE VICENTE:** Can you go back one, please, and explain to me
25 some of the top --

26
27 **SHANNON CALAY:** Sure and so at the top, you've got mortality,
28 natural mortality, that's age that it -- That's the M and you've
29 got von Bert parameters and K and L infinity and --

30
31 **VANCE VICENTE:** Now I get it. Thank you.

32
33 **SHANNON CALAY:** Our report is actually going to contain a little
34 bit more detail than I am going into here. This, I am
35 presenting in a somewhat different order than what appears in
36 the -- This makes more sense to me and I am not using all of the
37 terminology that Tom uses and so I hope in my liberal approach
38 to this that I have not misconveyed any of the information, but
39 I don't believe so.

40
41 Here is how I would do this, having been through the SEDAR-46
42 process. I think this is how we would do this in the Caribbean
43 and so the very first thing we would need to do is identify what
44 are our management objectives and there are a number I've listed
45 here that we could consider.

46
47 For example, if your objective is to eliminate overfishing, then
48 you can tell these models what is your acceptable probability of

1 overfishing and it could be 50 percent. Magnuson says it can't
2 be greater than that. It could be a lower probability of
3 overfishing if you had a desire to be more conservative.

4
5 You might decide you want to maintain or recover stocks at
6 levels consistent to MSY and so if you wanted to do something
7 like that, you might consider a management objective that the
8 probability that your stock size is greater than some threshold
9 of 60 percent or greater. You might want to minimize the
10 probability of a severe stock depletion event, for example, less
11 than 10 percent probability that you stock size will be less
12 than 10 percent of BMSY.

13
14 Probably more of an interest in this group, and it was in SEDAR-
15 46, is the average yield you want to obtain over the long term
16 and so you can, for example, say you would like to achieve at
17 least 80 percent of the long-term yield predicted by a
18 particular data-limited approach or you might want to achieve
19 stable catches. You might want to reduce the variability in
20 your annual catches. All of these can become your management
21 objectives and I will show you how this --

22
23 **RICHARD APPELDOORN:** Are you going to do the plot part?

24
25 **SHANNON CALAY:** The plot part? There are tradeoffs.

26
27 **RICHARD APPELDOORN:** There are tradeoffs.

28
29 **SHANNON CALAY:** Right. Exactly. I am going to show you what
30 he's talking about in a moment, the tradeoffs. You can't
31 necessarily have everything you want at the same time, but you
32 have a way of examining the tradeoffs, which I will show you.

33
34 The second thing that we did -- Well, actually it was the first
35 thing we did there, but it's the second thing I would do. You
36 conduct a feasibility study to determine which are your possible
37 suite of approaches and in this case, these are our stocks
38 across the top and so we have Puerto Rico hogfish and Puerto
39 Rico yellowtail and these are essentially the data that are
40 required for these approaches.

41
42 If it's a one, it means we had some data and if it's a zero, we
43 had no data and so using this feasibility study reduced the set
44 of data-limited methods from fifty-seven to about fifteen models
45 that we could actually use.

46
47 **WALTER KEITHLY:** What kind of abundance, out of curiosity?

1 **SHANNON CALAY:** Well, abundance in this context is probably the
2 depletion estimate and most of these methodologies, or many of
3 these methodologies, require an estimate of depletion, meaning
4 what is your current stock status relative to virgin.

5
6 This was determined, for the purpose of these exercises, using
7 TIP information and life history and so essentially what they
8 did is they determined, from the life history parameters, what
9 your mean size and your maximum size of the animals in the
10 population would be if there was no fishing. Then we looked at
11 the size structure now and that was used to inform a depletion
12 estimate.

13
14 The reliability of that estimate is exactly what we should
15 review when we get to the webinars and the review workshop,
16 because that depletion estimate is crucial for these methods and
17 if you don't find it reliable, then you have to look at the
18 sensitivity of the models to that estimate and determine whether
19 you can think the results are robust.

20
21 **TODD GEDAMKE:** Shannon, just for those members of the SSC that
22 have heard me babble about mean length over and over and over
23 for many years, it's basically the same approach that I've
24 presented for many years on the mean length estimate.

25
26 **SHANNON CALAY:** There are other ways also to estimate abundance
27 or to estimate depletion. You can also use effort, for example,
28 but the way we did it was for life history and mean length.

29
30 **RICHARD APPELDOORN:** So, just to again fill in, there were
31 separate working groups within the larger thing and so one group
32 that I was on was looking at the life history parameters and
33 what were the best datasets and what was our thoughts about the
34 reliability of those.

35
36 There was another one working on the index and I'm not sure
37 where abundance was covered, but there were groups that did a
38 lot of work in getting this stuff all together for us to even
39 look at and so there was a lot of detail in looking at these
40 data going into it and it still doesn't remove the caveats about
41 do we end up getting something that's reliable.

42
43 **WALTER KEITHLY:** What's the index?

44
45 **SHANNON CALAY:** Index is an index of abundance and for the
46 purposes of these data-limited approaches, you can only put one
47 index of abundance into these models and so what we had to do
48 was look at fishery-dependent data that we had that could be

1 used to create an unstandardized -- A nominal CPUE index,
2 because we didn't know what species we were going to do walking
3 in the door and so we couldn't standardize the indices.
4
5 We had nominal indices for any gear that was selected by the
6 group, but you basically had to determine where the majority of
7 your catches are coming from or what gear you think represents
8 the trend in population.
9
10 **RICHARD APPELDOORN:** So you're keeping it with effort,
11 basically.
12
13 **SHANNON CALAY:** As a proxy.
14
15 **RICHARD APPELDOORN:** If there a change in how the gear is being
16 used or the mesh size or something like that, that's going to
17 screw it up.
18
19 **SHANNON CALAY:** Exactly and so ideally we would want some
20 fishery-independent survey there and what we actually have
21 available to us is fishery-dependent nominal catch per unit
22 effort trends for the dominant gear.
23
24 **WALTER KEITHLY:** So your abundance at the bottom, that's a
25 single gear?
26
27 **SHANNON CALAY:** That's one estimate of current depletion.
28
29 **WALTER KEITHLY:** The terminal tear or whatever?
30
31 **SHANNON CALAY:** Correct.
32
33 **WALTER KEITHLY:** And the index is continual based on CPUE?
34
35 **SHANNON CALAY:** Right. Exactly and so you will note that for
36 some of these stocks -- I can't remember which of the spiny
37 lobsters, but it might be St. Croix and I am not sure, but there
38 has essentially been a reduction of one mode of fishing and an
39 increase in diving, essentially.
40
41 In those cases, you don't have a dominant gear type and the
42 gears are different enough that they can't be combined and so
43 that's where you would have to examine the sensitivity of these
44 models to how you treat that index of abundance, because there
45 is no dominant gear. I think that we had other situations like
46 that as well.
47
48 Another problem we had, just because we're pointing it out, is

1 in the stoplight parrotfish, they had not been on the form until
2 2011 and so they were under all parrotfishes combined and then
3 they started to break them out by species in 2011, but we tried
4 to create one continuous time series of stoplight parrotfish by
5 breaking out the parrotfishes from TIP species composition
6 information.

7
8 As soon as they started going on the form, the stoplight
9 parrotfish catches plummeted and they became very low, for no
10 apparent reason that was obvious to us, and so there are a lot
11 of caveats here.

12
13 You know we basically put in the data that was available to us
14 and we're going to go over how appropriate the data was, but
15 there are caveats and I don't want to pretend that we're in an
16 ideal data quality situation here in the Caribbean.

17
18 The third thing you -- Once you get all of your data, then you
19 run management strategy evaluations and essentially what you do
20 is you specify your operating model and that just means the
21 data, the stocks, life history, the observation error, et
22 cetera. You run these simulations and you evaluate then all of
23 your results in the context of those simulations.

24
25 By doing this, you are able to eliminate poor performing models
26 and you are able to eliminate models that don't achieve your
27 management objectives and once you define that suite, you can
28 run targeted MSE simulations that allow you to conduct your
29 diagnostic testing and your sensitivity analyses and I'm going
30 to show you a little bit of what looks like.

31
32 After you do this MSE, you've got all the data and all of your
33 assumptions already in the model and it's essentially the final
34 model that we've created through SEDAR-46, but we haven't done
35 any triage on the methods yet and so all of these little spaces
36 -- This is the probability of overfishing and this is the
37 relative yield in pounds compared to the long-term data yield
38 and what you've got here is the suite of plausible models that
39 we've told you about for which we have enough data detected.

40
41 You can see they fall all over the place, from models that
42 essentially have nearly 100 percent of overfishing to models
43 that achieve only 20 percent, for example, of your relative
44 yield.

45
46 What you want to do here is determine what are your important
47 management objectives and what thresholds are you going to use
48 to reject models, because obviously you're not interested in

1 models with a 100 percent chance of overfishing and you are
2 probably not interested in models that give you very little
3 yield compared to what's possible.
4

5 The reason for this is that you will see, in several places in
6 this presentation, well a few anyway, where these are basically
7 -- I am getting ahead of myself and let's just do it in the
8 order that I'm prepared to do it in.
9

10 The first thing you want to do is decide what performance
11 measure you're interested in and what the thresholds will be for
12 eliminating models.
13

14 **RICHARD APPELDOORN:** Basically, you want to be in the upper left
15 of those two graphs.
16

17 **SHANNON CALAY:** Right and so this is the tradeoff that Richard
18 alluded to. You basically have to determine your management
19 objectives, but you have to also realize that the higher -- The
20 lower your probability of overfishing, for example, the lower
21 your relative yield is likely to be.
22

23 These are -- I just chose some, but there is a number of
24 management objectives. In this simulation now, you can run
25 across it all of the -- You can actually give it observation
26 error, essentially, and you can run it across that observation
27 error in this simulation context and you get these diagnostic
28 plots and this is one of them.
29

30 Now, on the Y-axis, you have long-term yield, again, relative to
31 MSY as a percentage and then your function yield relative to --
32 I think that's a -- The bottom axis is cut off and so it's just
33 -- I think it's actually the parameter estimate. I will have to
34 look, but the interpretation essentially is that -- For example,
35 DB-SRA is one of the data-limited approaches and for that
36 parameter, you see that it has a very -- The scale is very large
37 on that parameter and the gradient is very high and it's been
38 colored in red, essentially. The model has identified that
39 particular model as performing poorly for that parameter.
40

41 You would get a suite of results like this for every data-
42 limited approach that you evaluated and every parameter that
43 that model is estimating and the idea is that you don't want to
44 have any evidence of bias or high gradients in the parameter
45 estimates and they are color coded by R and so basically it's
46 just a visual tool to help you identify those models that have
47 poor performance.
48

1 We would have to do this for all of the suite of models that we
2 were examining to determine whether they have any behaviors that
3 indicate poor model performance and then you also get something
4 like this and this is truly hideous, but, again, each one of
5 these panels is a data-limited method.
6
7 On the top, you have F over FMSY and then B over BMSY and then
8 this is just another suite of data-limited approaches and these
9 are projection years and so you see that your trajectory of
10 essentially fishing mortality and biomass projected and some of
11 the better performing models in this case -- You know you
12 actually think you can say something about the trend in biomass.
13 You have a coherent sort of result, but other models, like this,
14 have disparate results and so in this context, a model like this
15 or like this indicates that at least for some of the simulations
16 we found a disparate result and so we would have to look at how
17 other models perform. This is not the Caribbean that I am
18 showing you.
19
20 Once you have looked through your management objectives and your
21 diagnostics and you have eliminated all those models that either
22 don't meet your management objectives or don't perform well,
23 then you come up with a suite of the best performing methods.
24
25 Then you apply them to your actual stock and then you derive
26 your catch recommendations and other management controls from
27 that suite of data-limited methods.
28
29 This is what the input data looks like and I have cut it off,
30 because you will see on the top year -- There is catch here is
31 the only thing that is -- For whatever reason, it's input
32 horizontally and so you have a catch estimate for each year and
33 everything else is vertical here and your abundance index too is
34 entered horizontally.
35
36 You see this is essentially the first page of the data input
37 file and you don't have to have all inputs. In this example, we
38 had no catch at age and if you do, it's a matrix by age and
39 year, obviously, but we just put an NA.
40
41 Here is where you put all the CVs for all of your observation
42 error in your parameter estimates and then, finally, you can
43 just put in the reference TAC, the total allowable catch, or, in
44 our context, ACL. That just shows up as a line on the plot, so
45 you have a reference value.
46
47 That's all of the input and this is an example of the results
48 that come out and so these are PDFs. They are probability

1 density functions of OFL, as Tom calls it, but I don't like this
2 nomenclature, because OFL in the U.S. context is the yield in
3 pounds that corresponds with fishing at FMSY to equilibrium,
4 essentially, fishing at FMSY.

5
6 You will see that mostly of the ad hoc approaches, like recent
7 landings history, all that really is is an acceptable biological
8 catch, perhaps, but it is not OFL.

9
10 What you will see here is the results of four different data-
11 limited approaches and they have four different estimates here
12 of OFL, ranging from near zero to something on the order of
13 35,000 pounds.

14
15 This is interesting now to me, because what we would show you
16 would actually have, for all of the approaches that we decided
17 met our management objectives and were not poor performing, you
18 would have an independent estimate of OFL and they could be
19 quite different.

20
21 That's because it isn't really an OFL. It is just the yield
22 that results from maybe an ad hoc data-limited approach. For
23 example, one data-limited approach is using recent landings
24 history alone and another data-limited approach is using the
25 third-highest historic catch level. Clearly those are not OFLs.

26
27 Now, you could also have some approaches that may show up here
28 that are quite precautionary. They may have a very low
29 probability of overfishing and a very low relative yield
30 compared to estimated MSY and so unlike our usual stock
31 assessments, where these might be sensitivity runs of a single
32 stock assessment, these are truly quite different approaches
33 that are going to have different levels of precaution.

34
35 They are going to have basically -- It's going to be important for
36 the SSC to weigh in on how we would handle whether we'll choose
37 a single model for this information or whether we will try to
38 use some clever approach and weight them by their
39 characteristics. This is what we will see. This is what comes
40 out of these methods.

41
42 **RICHARD APPELDOORN:** Can you just explain what the dotted lines
43 are?

44
45 **SHANNON CALAY:** The dotted lines, I think they're just the
46 median of each one of those model PDFs and so you see some of
47 them are quite -- They are not very normal in their
48 distributions and so it looks to me like a median. This value

1 here, in this case, is just the reference ACL and so whatever
2 our ACL is for a stock, that line will appear and you will have
3 the ability to say that the OFLs are supported by these -- The
4 approaches are similar to or much different than what we're
5 using right now.

6
7 **RICHARD APPELDOORN:** That illustrates, I think, nicely some of
8 the -- Without looking at some of the other things and just
9 looking at this OFL level, it could be anywhere between 1,000
10 pounds and 4,000 pounds, or whatever that is, and you have
11 something like the MCD approach, which is fairly normal looking
12 and has fairly narrow bounds relative to the green and the red
13 ones, which are very close. Even though you're getting medians
14 on those, you're not really sure where those are.

15
16 **SHANNON CALAY:** Yes and you will see some that show up where
17 they are showing no real results. You will see some that have
18 nearly a straight line across the figure and in those there is
19 usually no -- It can't estimate OFL, really. It's estimating
20 and basically saying there's a uniform probability of any
21 number, essentially.

22
23 **TODD GEDAMKE:** Is that a real --

24
25 **SHANNON CALAY:** This is real and it's --

26
27 **TODD GEDAMKE:** I don't want to know what it is, but I just
28 wondered if it was real.

29
30 **SHANNON CALAY:** It is real. It is one of the Caribbean stocks,
31 but the reason I don't want to get into too much detail about
32 what it is that I still think that what we put together for the
33 November meeting was quite provisional in nature and we have
34 these webinars scheduled, one next week, to go over those inputs
35 and make sure that we're confident that there was in fact
36 specification and so whatever we produced there was meant to be
37 a demonstration of the methodology and a proof of concept, but
38 it was not ready yet to make management advice.

39
40 **RICHARD APPELDOORN:** They actually had the recommendation to not
41 put something on that X-axis, so you can see the relative
42 positions, but the actual amounts would not be strong, because
43 they don't want the dialogue to be this species and that number.
44 It's the methodology that's important.

45
46 **SHANNON CALAY:** All right and so you can then conduct
47 sensitivity analyses and account for scientific uncertainty
48 under a suite of candidate models and if you found that your

1 sensitivity was quite large, you could theoretically adjust your
2 ABC with a buffer and that would be essentially an SSC decision.

3
4 The sensitivity analyses look something like this and so on the
5 Y-axis you have your yield, essentially, in thousands of tons,
6 in this case, and then your X-axis you have the parameter or
7 variable input level and so in this case, this is DB-SRA and so
8 you would have one panel like this for every data-limited
9 approach that you were evaluating.

10
11 These are the parameters that are in the DB-SRA data-limited
12 approach and so you have catch, mortality, some idea of FMSY, as
13 opposed to natural mortality, et cetera. You will see on the
14 bottom is that range of the parameter value and then on the Y-
15 axis again is yield and what you're hoping to see is that across
16 that range of parameter values that your yield estimate is
17 relatively constant, but in some cases it's obviously not and so
18 this is depletion right here.

19
20 Your yield estimate in this case depends very much on what you
21 specify for depletion and so in this case it was looked at from
22 0.08 to 20 percent, but obviously this is going to be an
23 important parameter to examine, the sensitivity plot, because in
24 most cases it's very -- The yield you are estimating for what
25 we're calling whatever, OFL or ABC, is very sensitive to that
26 depletion estimate.

27
28 **RICHARD APPELDOORN:** If I recall, Tom was saying that there is
29 some level of depletion beyond which they won't work and I think
30 it was for like 20 percent, wasn't it?

31
32 **SHANNON CALAY:** Yes, probably. All right. So there may be a
33 decision made that there is insufficient data or that the data
34 quality is insufficient to apply any methodology and to
35 recommend any management measures and that occurs even when you
36 do data-rich assessments sometimes, that they're just not
37 acceptable for management purposes.

38
39 The advice coming out of this NRDC report, I think, is
40 consistent with -- I think it's a good recommended approach, is
41 to adopt interim measures and then update a data collection plan
42 and so the toolkit actually does provide a tool for determining
43 what data is most informative for your selected DLM approaches.

44
45 If you have your suite of thirteen data-limited approaches that
46 you felt were the most appropriate for the Caribbean, we could
47 run this needed function from the DLM toolkit and it would tell
48 us what data is required to improve the models and so that can

1 just be helpful. I mean I think it's not going to surprise
2 anybody, the kind of data you need. You need to be able to
3 inform that depletion estimate and you need life history
4 information and you need catch.

5
6 I don't think the answers would surprise us, but it's probably a
7 good exercise and then the interim measures could be as simple
8 as retaining your ACL control rule now, which is just to use
9 recent landings information. It could be this is just conduct
10 business as usual if these models are not useful for management.

11
12 What are the next steps, essentially, for this? We need to
13 finalize all of our models. Right now, they are in provisional
14 condition. We have the review workshop in February and that
15 involves CIE and SSC reviewers.

16
17 We expect to present the results to the full SSC sometime after
18 April or in April of 2016. The reports will be ready in March.
19 The SSC, if it operates similarly to the Gulf and South Atlantic
20 SSCs, will determine whether the results are best available and
21 also whether they are useful for informing management.

22
23 If the SSC determines that the results are useful to inform
24 management, I think it's likely that we will have to reconsider
25 the management framework that we operate under and I guess I can
26 go into that now. I don't know if this belongs under another
27 topic, but it's just a few slides.

28
29 This is just a potential management framework and this would
30 obviously not be a Science Center decision, but one approach
31 would be a tiered control rule, which is similar to what they
32 use in the Gulf and South Atlantic, where if there is assessment
33 of information available, then the OFL will be determined from
34 the assessment outcomes and the ABC or ACL could be buffered to
35 account for uncertainty, using some control rule or whatever you
36 want to call it, some tool.

37
38 If the SSC rejects the assessment information, then you would
39 use the interim measures, such as that derived from recent
40 landings history. That was the how the tiered control rule
41 would work.

42
43 This is just to remind me that DLM results do include the PDF,
44 or recommended yield. I just want to point out that this is for
45 all sectors combined for any given stock. This could still be
46 allocated to recreational and commercial sectors using, for
47 example, the historic landings, but these results would be for
48 the stock itself and not sector-specific.

1
2 You currently manage, as you well know, using species groups and
3 I just wanted to point out that the species groups can be
4 retained. ACLs can be computed for group members as they are
5 assessed, but your unassessed members, you can still derive
6 their ACL from recent landings history and a group ACL could be
7 computed as a sum of the species ACLs.

8
9 Allocation, like I said in an earlier slide, can be derived from
10 historic landings and so we can still operate in the framework
11 that you are accustomed to and an alternative approach is that
12 if we assess a species that could be removed from the species
13 complex and managed separately, the unassessed members could
14 remain in the complex and the ACLs could be determined using the
15 existing methods.

16
17 What I am trying to get at here is you will need to find a way
18 to use -- If the group feels that the information is useful for
19 management, you currently don't have a way to adjust your ACLs,
20 as I see it. Your ACLs are determined by recent landings
21 history alone and so we've got to make sure that we don't set up
22 a situation where we provide management advice and it can't be
23 used in your management framework, because obviously that would
24 be a waste of time and effort and so we ought to have a little
25 bit of thought about how these can be used in the event that
26 this SSC determines the advice is useful.

27
28 **RICHARD APPELDOORN:** Relative to your first point, however, if
29 we're talking about establishing FMUs and we say, okay, we now
30 have enough data to take a species and analyze it separately and
31 pull it out, does that require a full amendment to the plan to
32 change an FMU?

33
34 **GRACIELA GARCIA-MOLINER:** If you create a procedure to do so,
35 then no.

36
37 **SHANNON CALAY:** Bill, in practice right now, analytically, are
38 you determining the recent landings history of each species?
39 Are you determining their average catch over what timeframe?

40
41 **BILL ARNOLD:** To do what? To determine if there is an overage?

42
43 **SHANNON CALAY:** A complex ACL. Are you determining an ACL for
44 each species in the complex and then adding it?

45
46 **BILL ARNOLD:** No.

47
48 **SHANNON CALAY:** What do you do? Can you --

1
2 **RICHARD APPELDOORN:** The data come in as species.
3
4 **MIKE LARKIN:** The landings have all the species in it, in the
5 complex.
6
7 **BILL ARNOLD:** The first thing, Shannon, is we don't do that. We
8 did that and it was a one-time thing. Back in 2010, we grouped
9 species and said here is all the species we know that are
10 managed for St. Thomas/St. John grouping and we collect all the
11 data for those and we established a single ACL based upon those
12 data, a single year sequence average.
13
14 **SHANNON CALAY:** My concern is obviously that if that's what is
15 on the books and that's your methodology, there is no easy way,
16 if this group wanted to, to use the assessment outcomes and so
17 we'll need to think about what adaptations to the management
18 framework are necessary, in the event that we can provide
19 management advice through stock assessments.
20
21 **BILL ARNOLD:** All right and so I don't anticipate this being
22 used until we have the new FMPs in place and this is brought
23 into action through those FMPs and everything is written to
24 capture what the SSC decides to do as they develop Action 3 of
25 these FMPs and decide how they want to determine reference
26 points.
27
28 **SHANNON CALAY:** The cautionary tale about stock assessments
29 everywhere is that the results that come out of this approach,
30 for example, are an ACL for one year and they would have to be
31 updated each year and we don't want to end up in a situation in
32 any SSC or council where our stock assessment information
33 becomes out of date waiting for management frameworks to be
34 developed. We need to kind of get in sync if we're going to be
35 able to cope with changes.
36
37 **BILL ARNOLD:** If we develop this and the SSC devises alternative
38 approaches to developing reference points, as we did -- This is
39 exactly what the SSC did for the 2010 and 2011 amendments. They
40 said here are the two alternatives, or however many alternatives
41 there may have been and it differed, for developing an MSY proxy
42 and here are the two alternatives, ORCS versus non-ORCS, for
43 developing an OFL outcome and here are the alternatives for
44 getting an ABC and here are the alternatives for getting an ACL.
45
46 That's the process they went through. The council had to
47 provide the preferred alternatives and that described the method
48 used to actually arrive at annual catch limits. That process

1 included, in the amendment, the actual outcomes from those
2 different applications and so if you chose Alternative a, this
3 year sequence for the MSY proxy, here is the table with all
4 those numbers, et cetera, et cetera.

5
6 So you're actually doing what you're saying and you're running
7 the model and you're getting outputs and you're embedding it in
8 the amendment, or in this case the FMP, and, in that case, it
9 was the amendment.

10
11 Then you've got another year of work to do before these things
12 become a final rule and go into place and so what you're telling
13 me is that by the time we get them into place that the actual
14 process we used to establish that ACL will have expired and they
15 will no longer be valid. That doesn't mean the process wouldn't
16 still be valid, but the actual numbers we used to develop that
17 would no longer be valid.

18
19 **SHANNON CALAY:** That's true of any -- When we do things for the
20 Gulf, every time we update an assessment, you are updating ACL,
21 every time.

22
23 **BILL ARNOLD:** Yes and we never do that, but, Shannon, we could.
24 Every year, in SERO, we run the new data and we get our new
25 three-year landings average. Now, I don't know how complex this
26 is going to be and maybe it's way beyond -- Maybe it's not
27 something that's appropriate for SERO to do, but I would assume
28 that each year you could update your landings history or
29 whatever you want to do to keep up with things regarding the
30 activity of the fishery and plug those new data in and run them
31 through the models and get your updated annual ACL, ultimately,
32 and then put those out there in a proposed rule.

33
34 It's going to be a very involved process and I don't know that
35 it's entirely appropriate for the Caribbean, because things just
36 don't change that much, but, hey, it could be done.

37
38 **SHANNON CALAY:** That's the decision of the SSC and the council.

39
40 **BILL ARNOLD:** That's right.

41
42 **RICHARD APPELDOORN:** You are running these models that generate
43 some kind of overfishing level and why would that be expected to
44 change year to year?

45
46 **SHANNON CALAY:** Well, it will change in your depletion. Like,
47 for example, if your stock --

48

1 **RICHARD APPELDOORN:** If you get new information that says a
2 parameter we used before really should have been this, that I
3 understand, but --

4
5 **SHANNON CALAY:** Every year we put new catch here and a new index
6 value. Your life history information would remain unchanged,
7 unless it was improved and a SEDAR committee agreed that there
8 was an improvement to be adopted.

9
10 Your depletion estimate would change each year, because you have
11 to -- You've got to do the calculation again of what the virgin
12 size composition was and what your current size composition is
13 and so there are several things that would be updated each year
14 and that might lead to a different OFL value, because now your
15 OFL values --

16
17 **RICHARD APPELDOORN:** Right and if we agree that happens, we will
18 have been warned about it from the sensitivity analyses. If
19 we're changing this, we really shouldn't expect too much change,
20 but if we're changing this, we could have a --

21
22 **BILL ARNOLD:** This is fundamentally different from the way these
23 things were originally set up. When we set them up, we didn't
24 use the most recent data. We looked at all the data and said
25 here is a period of time when landings were stable and
26 representative of what this stock can -- Actually, what this
27 fishery can support, because we didn't use --

28
29 **RICHARD APPELDOORN:** Regardless of the effort dynamics.

30
31 **BILL ARNOLD:** Yes, regardless of -- Here is a time when things
32 were stable and that's what we're going to set as our reference
33 points and they were all based on that sequence and so as we
34 went forward, the argument is the fundamentals of the fishery
35 and the level at which it can operate have not changed and so
36 that number just sits there.

37
38 Until something tells us that it has changed, and you should
39 probably comment on this, Todd, but until there is some reason
40 to say that's no longer what represents stability and we need a
41 new representation of stability, we then change it and we
42 haven't changed it. I am not saying that's good, but it's very
43 different.

44
45 **TODD GEDAMKE:** It's very different. It's a challenge to put it
46 in, but your average catch approach, which you're talking about
47 stability, the assumption of that approach is that you're
48 dealing with a period that was sustainable at whatever level it

1 may be.

2

3 There is other methods that are in there that may look at the
4 trend over the last three years, the slope of the change that
5 could be driven by a catch year that is very different. It's
6 hard to answer specifics when you've got forty-seven different
7 potential approaches at your fingertips on this, but this is a
8 critical conversation for the next step, because it makes no
9 sense if the framework, if the whole system, can't adapt or
10 operate with this type of update setup.

11

12 With that sustainable assumption, that's not going to change.
13 Like you're saying, unless there is something to go back and
14 take a look at, that's not going to change, but there is other
15 assumptions and other pieces within those models that could be
16 affected just by the last couple of years or take the TIP data.

17

18 If we use a mean length method that we had a different pulse, a
19 pulse in recruitment or something different, the size structure
20 in the TIP sample for one year could be very different than the
21 previous years. Hopefully the methods won't respond or react to
22 it dramatically, but there is a chance for that to change every
23 year and I think that part of the philosophy behind this is that
24 you're in a situation where you should reevaluate it annually
25 and make sure that there aren't things that are changing. Your
26 average catch is absolutely just a stable -- It's going nowhere.

27

28 **BILL ARNOLD:** Practically speaking, I think a year is going to
29 be tough, with the council and everybody that's working for the
30 council, to achieve. I mean we meet three times a year and no
31 more and the other councils meet five or six times a year.

32

33 I am not making excuses, but I just think it's going to be tough
34 and so is there an option to do this every two years or every
35 three years, because we could take that to the council and say
36 we're going to bring you a radially different approach and
37 incorporated in this is an X year update, a full formal update
38 to this stuff.

39

40 **SHANNON CALAY:** I guess I have a few thoughts about that. Of
41 course, it's possible. You can maintain the constant catch for
42 a year or two or three. The longer you retain it, the more
43 likely it is that your true result is different and so you will
44 be misspecifying OFL at that point and so you should at least
45 address them, I would think, no less frequently than every third
46 year.

47

48 However, in most of the -- In many of the councils, annual

1 updates are frequent. I mean that's what they routinely do and
2 so that's really the directive from the agency, is we should be
3 updating our information more frequently rather than less.

4
5 **BILL ARNOLD:** Okay and so who is they and is that everything
6 they deal with or the data-rich species, like the politically-
7 important species or is it the dogs of the management plan?

8
9 **SHANNON CALAY:** The truth is in most of the areas where they are
10 able to conduct annual stock assessments, we're talking about
11 data-rich species. We're talking about agencies that have high
12 levels of staffing to be able to conduct those annual
13 assessments.

14
15 **BILL ARNOLD:** The Gulf has plenty of data-poor species.

16
17 **SHANNON CALAY:** We are doing this same exercise in the Gulf in
18 April.

19
20 **BILL ARNOLD:** Are you intending for it to be an annual update
21 for those data-poor species?

22
23 **SHANNON CALAY:** Yes, it will be annual. I see a question.

24
25 **RICHARD APPELDOORN:** If the landings were set up -- If you agree
26 that the model is working and giving you something useful, the
27 updates are almost trivial. It's just plugging in the --

28
29 **JOHN HOENIG:** I was going to say that you don't have to run the
30 DLM toolbox.

31
32 **SHANNON CALAY:** No, you don't have to do anything. I mean
33 literally you put in the new catch estimate and the new effort
34 estimate and the new estimate of depletion and hit "go". I mean
35 it's trivial.

36
37 **TODD GEDAMKE:** There is a potential tiered way of looking at
38 this too, where you set it up that says we've gone to this
39 process and it may take a year for it to get in place in there,
40 but you can have some sort of framework adjustment that allows
41 you to adjust on annual estimate within there and then do an
42 evaluation of maybe the DLM toolkit for different models every
43 three years.

44
45 You're dealing with what would be a trivial update to the
46 numbers annually and then a more extensive one that is scheduled
47 for some other time period.

48

1 I think it's important to recognize that what you're looking at
2 with some of these tools is -- By going into the data-limited
3 realm on some of these, you are also acknowledging that you have
4 some data limitations to out this comprehensive model together
5 and I think it's important to have the responsibility or that
6 feeling of at least revisiting that and it may be problematic
7 from a --

8

9 **UNIDENTIFIED MALE:** Political point of view.

10

11 **TODD GEDAMKE:** Well, I mean -- Okay. So he just said political
12 point of view and I'm not sure everyone heard that and this is
13 really important in this too, because there are performance
14 metrics that come out of this and one of the common performance
15 metrics that we're looking at in many places is variability in
16 catch.

17

18 From a political point of view, you can put those desires of the
19 council in as a performance metric and say your catch level each
20 year is only going to fluctuate by 20 percent and I think that's
21 something we discussed at SEDAR.

22

23 **SHANNON CALAY:** Absolutely.

24

25 **TODD GEDAMKE:** That's something in there that you can -- If that
26 is an important metric for managing your fishery, that can be
27 put in there and so that can double the political blow, in some
28 ways, but determining the performance metrics from the council,
29 or at least them vetting it or I don't know how that would work,
30 but that's, in my mind, one of the most important things in this
31 whole process, is making sure that what we're looking at is what
32 the council wants.

33

34 **KEN STUMP:** Shannon, there are a few examples, existing
35 examples, of annual assessment specifications, but most of the
36 councils, including ones that have annual specifications, have
37 moved to at least biennial and often specify for up to three
38 years, just in case.

39

40 I think a two to three-year timeframe is more realistic in most
41 of the councils, but here is the thing and it's something I have
42 noticed about the Southeast, is that because there was not a
43 historical use of prior catch limits as a Magnuson tool, there
44 is no catch specification process in this region.

45

46 There is one that's very well specified with frameworks that are
47 specified in the FMPs in other regions and so say it's the North
48 Pacific or the Pacific Council and they have in their FMP that

1 it's a biennial specification process and there are annual
2 updates, where information is available, and there are
3 frameworks in place in the FMP to allow those updates to be
4 easily turned over.

5
6 This region doesn't even know what a catch specification process
7 is and I would argue that it needs to be set up and instead of
8 like whenever in the next random SEDAR assessment comes around,
9 every five or ten years, I'm going to update and then I'm going
10 to respecify ABCs and ACLs.

11
12 I mean I think this would be an opportunity, and probably a
13 necessity if you're going to do this right, to lay out in this
14 FMP, or these FMPs, that it's going to be a biennial or
15 triennial, or whatever you're going to specify for up to X
16 number of years, and then you will have a specified framework
17 that would allow you, if the information is available, to make
18 adjustments in the interim in a timely fashion.

19
20 **SHANNON CALAY:** Yes, I agree. I think after we -- We chose
21 these stocks and, kind of like Rich said at the very beginning,
22 to have a few that were kind of our data-rich frequently caught
23 stocks and a few in the more moderate category and a few that
24 are relatively poor, to try to determine over what suite of
25 species these approaches might be useful and the trick is to get
26 enough technical participation in the evaluation of this
27 methodology and the evaluation of the data that went into this
28 methodology for this group to feel comfortable that you
29 understand whether these approaches can be used for management
30 advice.

31
32 If the consensus of the group is that these methods are useful
33 for some stocks, then we really do need to develop that
34 framework for how this information will be used to develop
35 management advice in the Caribbean.

36
37 It's my opinion that the Center participated, to some extent
38 with Todd, in the creation of the ACLs in the determination of
39 the years and that we did only because we did not have stock
40 assessments and so that was a necessity rather than a desire, to
41 specify the ACLs in that fashion.

42
43 The question, in my mind still, having participated in this
44 process, is given the qualities and characteristics of the data
45 available to us in the Caribbean, whether we can offer you
46 anything better yet and that still remains to be seen as we
47 review these assessments.

48

1 I don't think -- I think even in the literature about using
2 recent landings history that there's a suggestion that you can
3 pick a reference range, where the stocks -- The trend in catches
4 is minimal and we can use it to essentially create a proxy for
5 maximum sustainable yield, but that's only going to be correct
6 if you are essentially fishing over that time period FMSY and
7 there is no way to know that.

8
9 What we're using is recent landings history alone and there is
10 just no way to know whether that's a good proxy for MSY or not
11 and some of these approaches get you closer to a proxy and
12 others are quite ad hoc and that's something we're going to have
13 to look at too.

14
15 In this suite of models that are identified that meet our
16 performance metrics and meet the diagnostic characteristics, are
17 they truly better estimates of an MSY proxy or are there other
18 ad hoc approaches that may or may not be any better than what
19 we're doing now?

20
21 All of these things have to be discussed and so I think this
22 approach is very useful and I think it's very powerful. You
23 know the toolbox is really easy to use and I like it a lot. The
24 data that we possess in the Caribbean is still what's available
25 to us and no matter how you treat it in the model, you need to
26 be aware of its limitations, but it all comes out glossy in the
27 end.

28
29 **RICHARD APPELDOORN:** It really does. I mean those graphs are
30 stunning.

31
32 **TODD GEDAMKE:** Bill, here's a thought and I don't know if it
33 makes any sense, but we're looking at ACL specification and I
34 don't know where procedurally if you could do something like use
35 a target that is actually adjusted annually.

36
37 **SHANNON CALAY:** Yes.

38
39 **TODD GEDAMKE:** I don't mean to take your thunder away.

40
41 **SHANNON CALAY:** No, it's not my thunder at all. It's just a
42 reminder of one thing I wanted to show.

43
44 **TODD GEDAMKE:** It's just I don't know where you get into the
45 process and time issues for the framework so the council can
46 adjust the target easier, rather than get into any of the proxy
47 issues or any of those. That target can be targeted and that's
48 quicker and easier to do, I would think.

1
2 **BILL ARNOLD:** I do not know, Todd. We have not worked that far
3 yet and so I don't know.
4
5 **SHANNON CALAY:** One thing that you just reminded me of is there
6 are several -- There are a whole suite of methodologies that we
7 can't use in the Caribbean at this moment and they are the ones
8 that can be used in the context of a target catch, a target
9 biomass, or a target index, essentially.
10
11 If we did determine that we -- If we could actually create
12 estimates for what is a target catch or what is a target
13 biomass, it would be another suite of approaches that's
14 available through the DLM toolbox that we cannot currently use.
15
16 **RICHARD APPELDOORN:** Target catch would be -- Can you give an
17 example?
18
19 **SHANNON CALAY:** An example is if the fishermen -- If the
20 fishermen had an idea of what catch per unit effort they wanted
21 to have, then you can use a suite of approaches that target
22 index, target that catch per unit effort that they want to
23 achieve.
24
25 **RICHARD APPELDOORN:** So catch and biomass are per unit effort,
26 depending on what --
27
28 **SHANNON CALAY:** Exactly and the way you would evaluate whether
29 those are reasonable approaches is by looking at their
30 performance metrics and you would look at, for example, what the
31 probability of overfishing of that target is and what the
32 probability that you're going to collapse the stock is and so
33 some of those will obviously be ludicrous and absurd and we
34 would reject them, but there may be others that function well
35 that meet our performance metrics and if we had those targets,
36 we could try those approaches, but right now we don't have them.
37
38 **JOHN HOENIG:** So since you brought it up, if there was an
39 interest by the council to look at targeted indices, for
40 example, for lobster and informal discussion said yes, we had
41 three pounds per trap per day and that would be a good value and
42 so there is some work being done to investigate this and if the
43 council were interested in this, they would have to develop
44 what's your target, which they could do in consultation with the
45 industry, which has the advantage that the industry is basically
46 getting to give a great deal of input and then it has to be
47 evaluated of what would that do.
48

1 My student -- Well, Doug Butterworth's student looked at one
2 control rule based on that and that's, I think, in the toolbox
3 and it's published and Tom suggested a different one, where just
4 if the catch rate goes up, you increase the catch and if the
5 catch rate goes down, you decrease the catch. Tom was
6 suggesting that you say, well, if the catch rate deviates from
7 three, or whatever you target is, that you adjust on that basis.

8
9 My student is now following up on that same literature and did
10 some analytical results and some simulation results and compared
11 if that seems to work out and the council may decide they want
12 to explore that. If they want to explore it, they would have to
13 consult with the industry to come up with a value.
14 Alternatively, someone, either my student or someone, would say
15 we would to know how would it work if we picked two or two-and-
16 a-half or three or three-and-a-half or four or four-and-a-half
17 or five and go through the toolbox.

18
19 You could say, well, based on what we think is going on in the
20 stock, anything from here to here would not crash the stock, but
21 would give you different yields and so on.

22
23 **RICHARD APPELDOORN:** Are you talking about having a target and
24 we're going to adjust what the allowable catch is going to be as
25 we track the performance of that target without ever knowing
26 what an OFL really is?

27
28 Are we talking about having something here that's going to -- A
29 model that is going to try and predict an OFL? They are two
30 different things to me and so the first one is --

31
32 **JOHN HOENIG:** Okay. I spoke pretty fast and I had a lot coming
33 out at once. Two possible ways to do it. One is to say we're
34 going to have a -- They call it the linear control rule. If the
35 catch rate goes up 10 percent, we will increase the ACL by X
36 percent, 10 percent or whatever.

37
38 The version that Tom Caruthers suggested was if you pick three
39 pounds as your target, then when the catch rate is above three
40 you're going to allow for increasing ACL and when it drops
41 below, you decrease your ACL.

42
43 **RICHARD APPELDOORN:** Okay and so that's without knowing what
44 maximum yield might be or anything like that and so we're not
45 plugging it into a model.

46
47 **JOHN HOENIG:** It will give you an ACL and it doesn't give you an
48 OFL, but in discussions that people had, they thought you could

1 probably come up with an OFL that would be related to --

2
3 **RICHARD APPELDOORN:** If you're tracking your system over time
4 and you're varying, you will see where it performs and if you go
5 too far, you will know you've gone too far.

6
7 **JOHN HOENIG:** That was the other thing when I was talking to
8 Tom. I asked him and he said that you basically will put this
9 in place and you won't learn and I said, why won't you learn?
10 If you find that most of the time you're above your target, that
11 should be telling you something or most of the time you're
12 below.

13
14 He said that the simulations that had been done suggested that
15 if you start in a good place that you will just remain in a good
16 place and you start in a bad place, you will remain in that bad
17 place. That was for the Durmond rule, I think. For a variant
18 of it, it's not clear what it will do.

19
20 I think what it will do is it will migrate to a point on the
21 surplus production curve and then tend to stay there, but that
22 remains to be seen and so I think --

23
24 **RICHARD APPELDOORN:** But isn't that what you want to know? If
25 you're on someplace on the production curve, you could then make
26 a statement of let's try a little bit above and if it drives it
27 down, you know you went too far.

28
29 **JOHN HOENIG:** You're not necessarily at any place on the
30 production curve. To be on the production curve implies that
31 you have reached equilibrium. You may not be at equilibrium,
32 especially if you set a target that's different or implement
33 something new.

34
35 I think you would move to the equilibrium curve and just
36 basically dance around an equilibrium spot, but it's not clear
37 that we'll do that and have --

38
39 **RICHARD APPELDOORN:** Are we talking about this attracting thing
40 or are we talking about something that's coming out of a model?

41
42 **JOHN HOENIG:** We're talking about if you keep adjusting your ACL
43 based on how your catch rate compares to either the previous
44 catch rate or the reference catch rate, what will that
45 eventually lead to? We don't know at this point, but we will
46 find out and I think Shannon's point was yes, there are other
47 things that could be done, but you would have to have as an
48 input, for example, what's your target catch rate.

1
2 **SHANNON CALAY:** Right and you actually have to evaluate whether
3 those are consistent with your performance metrics, which we
4 were not able to evaluate, because we don't have target catches,
5 target biomass, or target indices.
6
7 **JOHN HOENIG:** Yes, but, as I said, you could --
8
9 **SHANNON CALAY:** You could do it over a suite of them.
10
11 **JOHN HOENIG:** Yes, a suite of them.
12
13 **SHANNON CALAY:** In fact, that might be interesting.
14
15 **JOHN HOENIG:** I think all you have to do is sort of sit back and
16 wait and these will probably have some simulations for you by
17 the next meeting and so you might as well wait and see what she
18 comes up with.
19
20 **SHANNON CALAY:** Just in the final points here, I was actually
21 sent here with a mission and the main mission is to get some
22 input from the SSC as to what those management objectives or
23 performance metrics we're actually going to use.
24
25 SEDAR-46 has some insights, but we did mention at that meeting
26 that we would bring it here too for your consideration, because
27 this is important for the model selection, what models are
28 actually useable that meet your performance metrics.
29
30 This can be adjusted and so it's not like it's causing us a lot
31 of additional work if you change your mind, thankfully, but what
32 we talked about at SEDAR-46 was essentially the minimum Magnuson
33 requirements, which is that you would -- Obviously you would not
34 want to exceed a 50 percent probability of overfishing. That
35 would be illegal and you would not want to collapse the stock
36 below 50 percent of BMSY with greater than 50 percent
37 probability, because, again, that's inconsistent, I believe,
38 with Magnuson, but other than that, the performance metrics are
39 more of a -- They are actually more discretionary on the part of
40 the council and the SSC.
41
42 The other ones that we considered were the proportion of the
43 average equilibrium yield, equilibrium MSY, that you want to
44 achieve and it doesn't make sense to select models that cannot
45 achieve a significant fraction of that long-term MSY estimate.
46
47 I think -- I can't remember if our criteria was 8 percent or
48 something like that. That might exclude too many models and so

1 we may have to kind of think about that tradeoff. The other was
2 variability and how much variability in the landings you're
3 going to accept from year to year.

4
5 Those are the ones that are considered with SEDAR-46 and I
6 didn't know if you guys had any further or more specific input
7 on what you think performance metrics should be.

8
9 This is an incomplete list of some of the ideas that were
10 discussed and so one that we didn't execute during SEDAR-46 is
11 some probability of stock collapse that's acceptable or not
12 acceptable. We didn't put a -- I don't believe we finalized
13 this recommendation as to what model of stock biomass, stock
14 size, indicates stock collapse or what probability of that level
15 is acceptable, but if you felt the need to put in a performance
16 metric like that.

17
18 I don't want to beat you all with a stick and so if you are
19 happy that we discussed it at SEDAR-46 and we'll maintain the
20 recommendations of SEDAR-46 for the time being -- They can be
21 adjusted once we start seeing what these results really look
22 like. We can reconsider those performance metrics, but if you
23 did have an idea that there's an additional metric you want us
24 to consider, it would be a good idea to discuss it now.

25
26 **JORGE GARCIA-SAIS:** Shannon, I remember that in the SEDAR-46
27 that there was some dry runs on some of the indicator species or
28 species of interest and there were some uncertainties about how
29 the method was actually reflecting the reality of the fisheries.

30
31 For instance, I remember lobster, I believe it was, and some
32 others, but my main concern actually is that those species that
33 were the dry runs were the species that we have the most
34 information on and I am wondering if we encountered some
35 difficulties in terms of adjusting our data and our data-limited
36 reality to these models that -- I don't know much about models,
37 but they don't seem to be so much data limited. They need a lot
38 of data. We tried on our most strongest data species and we
39 encountered some uncertainties and I wonder what it would be
40 when we go down the line.

41
42 **SHANNON CALAY:** Well, you know, first of all, there is no
43 perfect stock assessment in the world. They all have
44 assumptions and they all violate some assumptions and so the
45 trick is to very carefully examine the assumptions we've made
46 and determine if they're realistic and if they're supportable
47 assumptions and look at the sensitivity of the results to those
48 assumptions and you may -- It may be that -- It may be that

1 there are certain things that we had to do to parameterize these
2 models that this group is not confident that that's an
3 appropriate assumption.

4
5 In that case, your SSC would have to decide whether these
6 results are useful in a management context and it could be that
7 they are not yet useful and we don't have the data we need yet
8 to actually conduct these.

9
10 Yes, you can simulate, but that's different than trying to use
11 the results for management purposes and so in the dry runs we
12 had specific things that we were concerned about and we did
13 intend to address some of those things again during the webinar
14 series.

15
16 One thing that comes to mind is the fleet selectivities. Some
17 of these methods are going to be quite sensitive to what you
18 assume for fleet selectivity and in a lot of the cases where
19 these methodologies have been used, it's relatively safe to
20 assume that your fleet selectivities are logistic, meaning that
21 as -- Essentially that the fish are equally vulnerable or fully
22 vulnerable at some age and that they remain that vulnerable
23 throughout their life.

24
25 In like trap fisheries, that is clearly violated. Only an
26 animal of a certain size can enter a trap and so at some size
27 the selectivity is zero.

28
29 **JORGE GARCIA-SAIS:** Fishermen do affect that by controlling the
30 size of the trap and the configuration, because they don't want
31 the big animals. They don't.

32
33 **SHANNON CALAY:** We call that dome-shaped selectivity if it's
34 only -- If only certain sized animals can actually enter a trap,
35 for example, that is a dome-shaped selectivity pattern and we
36 can do that in the context of these data-limited approaches, but
37 we need to explore how robust the results are to that
38 assumption, because we don't have the information to estimate
39 the actual selectivity and so we're going to have to make an
40 assumed selectivity pattern and then see how robust the results
41 are to that assumption. These are the things we're going to
42 have to examine as this SEDAR process continues.

43
44 **JORGE GARCIA-SAIS:** One further question that I believe that --
45 I know I brought it up, but I didn't bring it up as I want to
46 bring it up now. What is the relationship, and I don't know if
47 you have played around with the von Bertalanffy parameter
48 situation to the depletion factors. How do the von Bertalanffy

1 parameters affect the depletion factor?

2
3 **SHANNON CALAY:** We will show you some of that information. I
4 don't have it handy right now, but what you're likely to see --
5 We specified error around the von Bertalannfy parameters, CVs,
6 and the model will essentially simulate across that uncertainty
7 and what you will see in those sensitivity runs is as you -- You
8 know as you change that depletion estimate from one side of the
9 possible outcome to the other, you will see how different your
10 model result might be. If it's very different, then the models
11 are extremely sensitive.

12
13 **JORGE GARCIA-SAIS:** That would be nice. That's something that I
14 would really like to see.

15
16 **SHANNON CALAY:** We will know more about that as we complete that
17 process.

18
19 **JORGE GARCIA-SAIS:** Right, because my concern is that some of
20 those values are used on species that are not from the Caribbean
21 and that are from species that are from Florida and up to South
22 Carolina or North Carolina or Brazil, you know places where the
23 temperature is different and fishes may grow faster or may reach
24 larger sizes and I don't know to what extent that parameter
25 affects the depletion and the overall behavior of the model.

26
27 **SHANNON CALAY:** We're going to explore all of that and so we'll
28 have better -- I don't have the answers today. I would presume,
29 like many of these approaches, the results will be very
30 sensitive to the depletion estimate and so that would not
31 surprise me at all if that's the outcome.

32
33 **BILL ARNOLD:** Shannon and Richard, how do you envision, if at
34 all, presenting this to the council next week?

35
36 **SHANNON CALAY:** I certainly wouldn't present this presentation.
37 This was a technical presentation.

38
39 **BILL ARNOLD:** No, I understand, but how --

40
41 **SHANNON CALAY:** I was going to actually sit down with Rich and
42 actually discuss what might be useful for the council to see,
43 because you know it's kind of couched in the agenda and it's not
44 specifically identified what they expect and so I don't know. I
45 really need some advice about -- I think that it's fair to say
46 that this a process and this is what the data inputs look like
47 and here's what the outputs would look like, but I certainly
48 wouldn't get into all of these technical concerns that's

1 probably not important to them.

2

3 **BILL ARNOLD:** I am not sure I would even mention fifty models.
4 I would sort of give this hazy kind of overview so you don't
5 scare them away too early.

6

7 **RICHARD APPELDOORN:** No, but I think the whole issue of
8 tradeoffs is -- Here is the things that we need to be concerned
9 about and we would need to specify things like that and evaluate
10 the models for those.

11

12 **SHANNON CALAY:** I would probably want to plant the seeds for --
13 One would presume, at least, that at some point -- At some point
14 we will be able to do something in the Caribbean that is better
15 than what we're doing now.

16

17 Whether that time is now or that time is in the future, I don't
18 know yet, but I would like to plant the seeds for how these
19 methodologies could, in theory, be used and what would be
20 required to use them.

21

22 **BILL ARNOLD:** The council deals in alternatives and they are
23 reviewing and considering alternative approaches to solve a
24 problem and then they try to identify their preferred
25 alternative.

26

27 **GRACIELA GARCIA-MOLINER:** I was going to suggest specifically
28 for the council that when you look at the tradeoffs that they
29 are going to be talking in the management objectives that you
30 actually force the issue of how much they want to deplete the
31 stock and things that are very specific questions that they can
32 give you an 8 percent or 10 percent or 50 percent within --
33 Forget the alternatives at this stage.

34

35 **SHANNON CALAY:** I think it's very appropriate as long as we
36 already have eliminated the ones that are illegal.

37

38 **TODD GEDAMKE:** I have two very related comments to both of those
39 things and one, Graciela, that was almost exactly what my
40 suggestion was going to be. The performance metrics would be
41 something, I think, that really -- I don't know if you're got a
42 menu of the possibilities, but there's a paper that -- It's just
43 got a whole long list of them and so you've got those and it
44 could get into a very long discussion and so I think the picking
45 and choosing and some input there is very important.

46

47 Then what you just said, which ones are illegal? You mentioned
48 something before that we might not have the data to do some --

1 This toolkit has a method that works in every data situation, no
2 matter what you -- You don't have to have data to do anything.
3 There are five or six that are in here that don't require data,
4 but they don't fit into legality or the current management
5 structure.

6
7 I am working on a parallel effort that's similar to this, but
8 one of the other things that is in there is governance structure
9 and I don't know how to make the suggestion, but before anyone
10 gets too far down this road, it would be interesting, or at
11 least helpful, for the Regional Office to weigh in on some of
12 the different types, or at least a discussion going on, of --
13 You know like this CPUE control rule. Is this something that
14 can even be entertained? Is this something that's worth going
15 down that road and exploring?

16
17 In your feasibility table, you determine which methods are
18 possible are data inputs and there is also governance structure
19 and legality and feasibility that could be incorporated and I
20 think that would fall on people that know more about that.

21
22 **SHANNON CALAY:** Yes and I would need assistance from a lawyer,
23 because, unfortunately, I am not a lawyer.

24
25 **BILL ARNOLD:** Unfortunately.

26
27 **TODD GEDAMKE:** I was pointing at Bill.

28
29 **SHANNON CALAY:** Unfortunately I'm not also a lawyer, in addition
30 to being a stock assessment biologist. It's completely beyond
31 me to know what would be legal.

32
33 **TODD GEDAMKE:** Yes and with that too, Bill, this is something
34 that lawyers weigh in and there's a binary one and zero of
35 whether you have the data or whether you don't have the data.
36 There is going to be clearly things that will never fly in a
37 governance structure and there is clearly ones that wouldn't fly
38 right now, but I think also it would be interesting to put the
39 0.5's in there. Which ones might need some further discussion
40 that might need a little bit of a white paper to explain how
41 this is a responsible way of managing in comparison to a current
42 average catch procedure or something like that.

43
44 **BILL ARNOLD:** All right. Here is what I want you guys to think
45 about. When you go in there next week and start discussing the
46 constraints and the targets, et cetera, et cetera, I think most
47 of the council members are going to say the only thing I care
48 about are those catch numbers and you pick the method that will

1 allow me to catch the most number of fish, because the council
2 is being strongly influenced by the fishermen that are on that
3 council right now.

4
5 That's what I think is going to happen and that's why I brought
6 up the idea of alternatives. If you think of alternatives,
7 really a lot of this stuff in the data-limited approaches I
8 think should be contained within SSC activities and really
9 should never see the light of day at the council meetings.

10
11 The council's SSC should have the authority to go through the
12 stuff given, and not next week, but maybe in that spring or
13 summer meeting, some input from the council on what they feel
14 that their targets may be. Some are legal and you could say
15 there are legal targets that we have to meet and there are
16 others where there is some flexibility and when we come back in
17 the spring, we will bring you some examples of how changing
18 targets affect outcomes, or something like that.

19
20 Otherwise, I think next week they will just be baffled when
21 you're talking about some of this stuff and they will say, show
22 me the money, because that's what they are going to want to see.

23
24 Considering alternatives, which is, again, what they have to
25 deal with, this approach could be one of three alternatives and
26 I am just throwing this out as an example. John's idea could be
27 an alternative approach and then the -- I don't remember the
28 guy's name that was at SEDAR-46 that presented the length-based,
29 but that approach could be another alternative and now the
30 council is choosing among very large, distinct alternatives and
31 within those alternatives, the SSC is doing the dirty work of
32 making them work, so that the council -- I am sure we're not
33 going to ask them to review fifty-plus DL methods, but we
34 shouldn't even be asking them to review or choose between two
35 data-limited methods.

36
37 **SHANNON CALAY:** This is why you need a control rule. This is
38 why you really need an operating practice, because what you
39 should be doing as an SSC is you should be determining ABC,
40 essentially, which is the obligation of an SSC, and the council
41 can't go over that recommendation, by law, right now, and then
42 whatever the council does to buffer that to ACL and ACT is their
43 own prerogative.

44
45 Essentially we would provide you with a suite of models that met
46 performance metrics and did not have poor diagnostic behavior
47 and so we would already have triaged acceptable models. You are
48 right that they might have a variety of outcomes and the mean

1 length estimator is one of them. It's not meant to be separate
2 from this. It just happens to be separate because it's not in
3 the toolbox, but it will still be one that's available to you.

4

5 **BILL ARNOLD:** That's fair.

6

7 **SHANNON CALAY:** You know in this case, I think the SSC just
8 needs to determine, when presented with a suite of five possible
9 approaches, how are you going to provide ABC recommendations to
10 your council?

11

12 **JOHN HOENIG:** I would like to jump in. If the council says we
13 don't care and just give us the most fish, then they haven't
14 understood the whole question, because the number of fish you
15 get is intimately linked to other things, like the stability of
16 the fishery and the risk tolerance.

17

18 They could say give me the most and you could say, do you want
19 the most next year or do you want the most in the long term and
20 do you care about volatility? Because if you say okay, next
21 year you can increase your quota by 23 percent and the following
22 year you're cutting it 48 percent, they're not going to be very
23 happy and they're going to say that last year there were so many
24 fish that I couldn't sell them and they rotted and this year
25 you're telling me that I can't sell the fish that I know I've
26 got a market for and so I don't think they want 30 percent up
27 and 40 percent down and if they say that they just want the
28 maximum, is that really what you want? Do you want to bounce up
29 and down like that and every year it's a different number?

30

31 They will say no, you're going to create havoc and so you say,
32 you want stability? Okay. What's your risk tolerance? Because
33 you can take an extra 20,000 pounds, except that then there's
34 like a 70 percent chance that next year you're overfished and
35 then you're going to have to cut and they don't want that. Just
36 don't go there. Then fine. Then you have to cut back.

37

38 They don't really want the most number of fish. They want the
39 most number of fish that's not going to create havoc, that's not
40 going to get them in trouble where they're overfished and they
41 have to have a rebuilding plan and it's not going to have quotas
42 bouncing up and down.

43

44 **BILL ARNOLD:** So take the "don't" out and replace them with
45 shouldn't.

46

47 **JOHN HOENIG:** What?

48

1 **BILL ARNOLD:** Take the "don't" out and say they don't want this
2 and no. They shouldn't want this. That doesn't mean that -- If
3 you guys lack credibility with this council, they will blow you
4 off like there is nothing to it.

5
6 **JOHN HOENIG:** That may well be and they may save give us the
7 most and we're going to pick this one because it gives us the
8 most, but it means they haven't understood and it means that
9 once they see the implications of it that that's really not what
10 we wanted and so we have to talk to them and they have to
11 understand that the number you get is going to be tied into the
12 chances of being overfished and having to do all kinds of
13 cutbacks and it's going to be intimately tied into the
14 volatility of it. Then they can start to think that, given that
15 understanding, what we want is this. I mean yes, they may say I
16 want the most, but, if so, they haven't understood the question.

17
18 **GRACIELA GARCIA-MOLINER:** I mean I don't think that the council
19 members are in that frame of mind, because they control the ACL
20 process and everything else and so they are aware of how things
21 are managed and they don't really -- They aren't asking for give
22 me the maximum, because we've seen from the ACLs and they
23 actually have been making management decisions, like the
24 seasonal closures, et cetera. That takes away from their
25 maximum amount of fishing that they can do that year and so they
26 are aware.

27
28 I am thinking in terms of the specific questions that you want
29 to ask them. You know, what risk do you want to take of not
30 having this amount of fish every year? Do you want this stable
31 average over a very long period of time?

32
33 Those are the questions that we need to ask them, so that then
34 they can give direction to the SSC in terms of following up with
35 the process and I wouldn't be thinking in terms of alternatives
36 right now, because the presentation of this should be basically
37 what they have requested.

38
39 You know they want a method or a way of analyzing the
40 information that we have and getting some information back from
41 the data that we have and keep the alternatives for the next
42 council meeting. This one is specifically to ask them direction
43 for the SSC and for the Science Center. You know how are we
44 going to constrain this so that we can get rid of all these
45 other models?

46
47 **BILL ARNOLD:** I am not suggesting we take alternatives to the
48 council meeting next week. I am suggesting the SSC be thinking

1 about how they are going to frame this within the concept of
2 alternatives, because ultimately that's how it's going to have
3 to be presented to the council.
4

5 **RICHARD APPELDOORN:** I think the list of questions needs to be
6 presented, but they also need to understand a couple of things
7 about that. One is certainly the tradeoffs, because if they say
8 we want this and we want that, other than the legal ones, which
9 they have to have, you may end up with no models and so the next
10 question is what's the priority there? If it's really this,
11 then we have to make a tradeoff that we're going to lean on that
12 side.
13

14 **JOHN HOENIG:** Instead of asking them what are the metrics and
15 why -- I mean, what the heck is a metric? You could ask them
16 how important is stability versus volatility and things like
17 that, so they can then start expressing what they want. We can
18 say okay, that's a metric.
19

20 **SHANNON CALAY:** Yes, there is a lot of jargon and lingo here and
21 it's even worse if you're in Tom talk, because he talks about
22 MPs and I don't even know what -- I know what it is, but it
23 seems like a lot of --
24

25 **RICHARD APPELDOORN:** I could ask him.
26

27 **GRACIELA GARCIA-MOLINER:** (The comment is not audible on the
28 recording.)
29

30 **SHANNON CALAY:** Just a complication is that my travel was not
31 authorized to the council meeting and so I am going to have to
32 either give it remotely, which I am willing to do, or it's going
33 to have to be passed to probably Rich or Bonnie.
34

35 **RICHARD APPELDOORN:** I am not going to be there.
36

37 **SHANNON CALAY:** You're not going to be there and so if it's
38 possible to do it electronically, I am willing to do it.
39

40 **GRACIELA GARCIA-MOLINER:** We will set up the Go to Meeting.
41

42 **SHANNON CALAY:** Or, alternatively, I can pass it to someone. An
43 SSC member would be ideal, if there's going to be one there.
44

45 **RICHARD APPELDOORN:** Reni.
46

47 **SHANNON CALAY:** I would just say that I won't be there in person
48 and so --

1
2 **JORGE GARCIA-SAIS:** You will be there.
3
4 **SHANNON CALAY:** I will be there in spirit.
5
6 **RICHARD APPELDOORN:** Let's do it electronically.
7
8 **SHANNON CALAY:** I think Go to Webinar is the way to go with that
9 and I will work with Graciela and with Rich and with Bill to
10 kind of structure the presentation appropriately and anyone else
11 who wants to participate in that conversation.
12
13 **RICHARD APPELDOORN:** While we have some experts here, I want to
14 raise an issue that's probably just demonstrating my ignorance,
15 but I am really, really uncomfortable if depletion is being
16 looked at from the form of the change in length frequency
17 structure, because that tells you about whether you are
18 currently overfishing or not but it doesn't tell you about
19 whether you are currently overfished or not.
20
21 Depletion, to me, is a biomass thing and it's not a level of
22 fishing thing and so how is it justified that you can use that
23 to generate your depletions?
24
25 **JOHN HOENIG:** I would look down my nose at you for that, except
26 that I had to ask Todd to explain it to me and so I guess I
27 can't do that.
28
29 **RICHARD APPELDOORN:** Did he explain it in a way that you could
30 explain to me or do I have to ask Todd?
31
32 **TODD GEDAMKE:** Rich, I think you understand it. I don't think
33 you would agree with it. Basically, you are looking at a size
34 structure that would be in a situation if there were no fishing
35 and so you use natural mortality and you say that this is how
36 your decline goes with it.
37
38 **RICHARD APPELDOORN:** That tells you about your level of fishing?
39
40 **TODD GEDAMKE:** Absolutely, but you can use FMSY as your proxy
41 for that fishing effort and then compare that to M and get some
42 sort of comparative relationship.
43
44 **RICHARD APPELDOORN:** If you're comparing it to M, then --
45
46 **TODD GEDAMKE:** Think about what the assumptions in there are.
47 With a length estimator, you're getting a total mortality
48 estimate and you have to have an M to get the F out of that Z

1 and then you're comparing that F which results from subtracting
2 the M to the M that you've subtracted in the first place.

3
4 It gets inbred, but there is also, in my mind and it's -- If
5 we're talking about a fishery and a species that's been
6 exploited for a long period of time, there is also the
7 assumption that life history traits are static and they are not
8 pliable at all and so you're taking a maximum length that you're
9 saying is occurring now, but that also occurred a hundred years
10 ago when the fish was unexploited.

11
12 It's a theoretical maximum length and people argue over it and
13 have gone back and forth with this group, but there are many
14 assumptions that are involved in that and I am also not totally
15 -- Well, I am not comfortable with it.

16
17 **JOHN HOENIG:** If I may elaborate on it, if you have equilibrium,
18 then a given F with a constant M will tell you the rate of
19 fishing and simultaneously what your stock is. When you're
20 saying, wait a second, is it telling you what rate of fishing or
21 biomass relative to virgin -- If it's equilibrium, it's both.

22
23 However, if it's not equilibrium and we can basically fit it to
24 non-equilibrium models and say Z is now this, then it will tell
25 you what -- If you have your current rate of fishing, but it
26 doesn't tell you where you are relative to virgin, because you
27 are not at equilibrium, and so you don't know what the biomass
28 is now relative to -- What you would have to do is sort of go
29 backwards in time and trace the history and say if it was at
30 equilibrium here, then the relative biomass was this and then we
31 fished for seven more years at this other Z and so do the
32 simulation and we're almost at equilibrium.

33
34 We are three-quarters of the way to the new equilibrium and so
35 then you could figure out what's your biomass relative to the
36 virgin and so it's a little bit more complicated than just
37 comparing what's the Z now to what happens if you only have M ,
38 because you have to either say that you're at equilibrium or
39 figure out that we're three-quarters of the way to the new
40 equilibrium kind of thing.

41
42 **SHANNON CALAY:** You know I agree that -- I mean there is much
43 national dialogue about the dependence of data-limited methods
44 on these depletion estimates and how reasonable these estimates
45 are. It's how we did it at SEDAR-46 and it could be specified
46 differently.

47
48 I mean it's one -- Essentially, it's easy to change out if you

1 have a more reliable approach or if we choose to go with a
2 different methodology, but that is how it was done for SEDAR-46,
3 is using life history and TIP information, because I did most of
4 it and so I remember how I did it. I didn't do it because I
5 liked it that way, but I did it because it was a way to do it.

6
7 **TODD GEDAMKE:** Shannon, you're aware of the dialogue and you're
8 also aware that this is going to be an issue that's going to be
9 discussed and so I think it's -- I don't think we even need to
10 make a formal recommendation, but a good explanation of
11 depletion. I mean 0.8 to 0.2 in there --

12
13 **SHANNON CALAY:** That wasn't even a Caribbean example.

14
15 **TODD GEDAMKE:** Okay, but a tight, narrow is not reflective of
16 our uncertainty on this. Now, there is ways of using length in
17 there, but there is also the catch free model that was goliath
18 and how did that depletion come up? That was an interview-based
19 process.

20
21 **SHANNON CALAY:** That's correct.

22
23 **TODD GEDAMKE:** They basically just interviewed the experts and
24 they said we've got a range and we have estimated depletion from
25 the divers that have been in this forever and so there is a
26 couple of ways where you can provide rationale for how you come
27 up with that range method, as long as that range is wide in
28 there. If you get too tight, there is going to be some serious
29 opposition.

30
31 **JOHN HOENIG:** Personally, I think the way that Todd was
32 explaining the depletion basically being more of a mean length
33 tells you the -- Then you get your F and that tells you your
34 depletion and your rate of fishing and it's not a bad way to go.
35 It's true you might not be at equilibrium and it's true that the
36 parameters may have changed, but it's actually grounded in a
37 hard piece of information, yet the mean length is only here and
38 not there and so that's got to be telling you something.

39
40 **RICHARD APPELDOORN:** That does tell you something.

41
42 **JOHN HOENIG:** I think that is telling you quite a bit and so I
43 don't think that that approach is the worst of the data -- I
44 mean a lot of the data-limited methods, I hold my nose and say
45 you've got to be kidding and that stinks, but we have to do
46 something and I don't think, in the relative hierarchy of
47 things, that what Todd was talking about with the depletion was
48 actually anywhere near the bottom of the barrel.

1
2 **RICHARD APPELDOORN:** Let me take a hypothetical situation.
3 Nassau grouper, we don't have catch data, because it's closed,
4 but we do have length frequency from the monitoring at the
5 aggregation sites. So you could say this is the length
6 frequency structure we have now and it's recovering and so we're
7 not talking about an equilibrium situation and so I'm not sure
8 how you compare it to an overfishing situation, but whatever you
9 get out of that is not taking into effect that all the other,
10 and I don't know how many aggregation sites there used to be,
11 aren't there anymore and so the length structure tells you
12 really nothing about abundance relative to what things used to
13 be and it's one of the most common groupers that was out there.

14
15 **SHANNON CALAY:** That's absolutely --

16
17 **JOHN HOENIG:** Are you talking Nassau? What about goliath
18 grouper? I am not sure what else you could do but look at the
19 mean length is going up.

20
21 **TODD GEDAMKE:** Nassau is an interesting one, because of the
22 example you just brought up. When you said the length structure
23 at the spawning aggregation and I did the old, here we go again
24 and you're going to get a -- Not a representative length
25 structure of the population, but you're going to get the
26 spawners and you're going to have to take your visual
27 selectivity and your -- There is considerations that you have to
28 do to use that information.

29
30 With Nassau, there is a situation where you're looking at, okay,
31 is anyone going to tell me that Nassau is 80 percent of an
32 unfished environment? No. I don't think anyone would argue
33 that, even the fishermen, right now.

34
35 Is it at MSY? Well, I think there's going to be very few
36 people, other than maybe a couple in there. Now you're down
37 into the 0.2 or 0.4 and that can be explored. With Nassau, we
38 do know that it's at the bottom end of the spectrum on there and
39 so, therefore, you can explore that bottom end of the range,
40 whereas you've got some other ones, a number of other species,
41 that you could have people arguing for a much, much wider range.

42
43 **SHANNON CALAY:** Yes and actually --

44
45 **RICHARD APPELDOORN:** That was my point. There is an extreme
46 example and, like you said, I think we all agree about where it
47 really is, but I think you can come up with some where we're
48 really not going to know.

1
2 **SHANNON CALAY:** Yellowtail.
3
4 **TODD GEDAMKE:** Yes.
5
6 **SHANNON CALAY:** I was just going to say that another intrinsic
7 problem with that depletion estimate is that the length
8 frequency -- The current length frequency comes essentially from
9 fishery-dependent data and if you've got a highly dome-shaped
10 selectivity pattern, you're not going to see any old animals in
11 that, even if they exist, because they're not caught in the
12 trap. There is a danger that the depletion estimates we created
13 from the TIP information are under -- They are overestimates of
14 depletion.
15
16 **RICHARD APPELDOORN:** Right, but you could go to diver surveys to
17 see whether you have that problem and we've seen that in data
18 that we've looked at historically in SEDAR, that different
19 methods are targeting different size ranges, for a variety of
20 reasons.
21
22 I mean we had the same thing happen with red hind. Just when
23 they closed the aggregation sites, they had to fish someplace
24 else and those populations are different, because we're talking
25 about the spawning aggregation versus something that's different
26 from that.
27
28 **BILL ARNOLD:** Shannon, I think you're going to say yes to this,
29 but can we apply different approaches on the different islands
30 within each of the different FMPs?
31
32 **SHANNON CALAY:** Yes, you could. I mean it really depends on
33 once you define that suite of management objectives. You're
34 going to eliminate some models right there, but other models
35 will be eliminated for diagnostics performance and so you may
36 not be able to apply exactly the same methodology across
37 multiple species or platforms, because some of them just may not
38 perform well in a certain situation.
39
40 **RICHARD APPELDOORN:** Are we in a situation where the management
41 goals, in terms of stability, et cetera, et cetera, can those be
42 stated as being different for each of the islands? You know
43 Puerto Rico wants to see this and St. Croix would like to see
44 that or is what the council wants to see?
45
46 **TODD GEDAMKE:** I had a simple answer and then you start thinking
47 about the individual island-based management plans and the point
48 of that is to allow different metrics in different places and

1 whether you agree with that or not, that's the fundamental move
2 in that process.

3
4 **RICHARD APPELDOORN:** That's an issue that should be raised to
5 the council. When we're talking about this, this is --

6
7 **TODD GEDAMKE:** I have not done stakeholder engagement on a lot
8 of things, but the few that I have, it's been very common that
9 the metric is stability, stability, stability. I mean it's
10 really they're looking at trend and they're looking at -- What
11 John was trying to get at before with some of these projections,
12 even though you may not be a quantitative person, the
13 projections can be intuitive if they are whittled down to -- You
14 know Shannon pointed out the absolute mess of plots in there,
15 but you can even look at them and say your biomass is going up.
16 You can see a trend up visually.

17
18 I think that you'll find that it will most likely be very
19 similar, what they're going to look at in different places, but
20 depending on the species, you may end up with some differences
21 and I don't know what exactly would be the short answer. It's a
22 very long answer, but yes, they can be done differently.

23
24 **BILL ARNOLD:** So stability and I think at least on St. Croix
25 these guys feel like they live in a pretty unstable world and
26 this is your opinion, but do you feel like that they're going to
27 emphasize stability as much in a situation like that?

28
29 **TODD GEDAMKE:** To do that, there's recruitment in here and
30 there's a way of putting in stability in the setup and I think
31 it's in the parameter, in the input file. We live in a very
32 uncertain world and this is what this does right here and you
33 can show one of those historical recreations that shows when
34 instability is.

35
36 Forget all the crazy analysis and this is what this simulation
37 model is showing and we're not showing a flat line for lobster
38 over the years. We are actually showing peaks and valleys in
39 there.

40
41 In one application, we put El Nino in and so we had recruitment
42 failures every seven years in places and that matched with what
43 the fishermen knew in places and so in some way this is
44 unbelievably complicated when you get into the nuts and bolts,
45 but on the other part of it, it can be presented in ways that I
46 think are a trend going up and perceived.

47
48 You can take trend and you can use normal, normal language and

1 then it's our job to translate that into what that performance
2 metric is and maybe not use the complicated language in there,
3 but something like a trend in increasing biomass or when you
4 start putting MSY anywhere on those axis, you're going to lose a
5 lot of those people, but if you say relative change in biomass
6 over the next thirty years or whatever, that's a metric that
7 they will really understand.

8

9 **BILL ARNOLD:** Everybody's concern about the ACLs is that they
10 will be capped and prevented from taking an advantage of an
11 opportunity and so suddenly the economy improves and they've got
12 an opportunity to sell twice as many lobster, because there is
13 twice as many cruise ships coming in, and the ACL will not allow
14 it.

15

16 **TODD GEDAMKE:** In the argument there, yes, that's definitely the
17 case, but if you were an analyst and you wanted to take a look
18 at the other way that moves forward, that's yield. We could
19 basically show that if you don't take advantage of that peak
20 this year that, for lobster in particular, you're going to leave
21 that for next year and you're going to actually get a 30 percent
22 increase in your biomass and you're going to provide stability
23 over those next few years.

24

25 Are they going to believe it? I don't know, but there is a
26 yield argument in some of this, that you can show an increase
27 based on protecting those peaks and I am not saying I agree with
28 it one way or the other, but I am trying to think of whether you
29 could actually put something in there that -- You would have to
30 have the recruitment index, which is in there. You would have
31 to have a recruitment index that you could respond to to change
32 your quota based on what they're seeing.

33

34 **SHANNON CALAY:** Right and the only way we could -- We don't have
35 a real run, but we could test hypotheses by creating simulation
36 recruitment indices. We don't have a real one to examine.

37

38 **BILL ARNOLD:** Shannon, what I would like to see in that meeting
39 next week is for this to be presented in a way that doesn't
40 scare them off and it intrigues them or attracts them and
41 provides them with a vision of something that's going to be
42 better than these ACLs that they truly hate.

43

44 **GRACIELA GARCIA-MOLINER:** The ACLs, it's not really that they
45 hate them, but it's that you have that -- They were the ones
46 that came up with closing the -- Two things. Does the Science
47 Center have an index for St. Thomas at least, a recruitment
48 index?

1
2 **TODD GEDAMKE:** For what species?
3
4 **GRACIELA GARCIA-MOLINER:** For species over in St. Thomas.
5
6 **SHANNON CALAY:** We didn't use any for this particular set of
7 stocks. We set zeroes across the board and so if it's
8 available, it wasn't used.
9
10 **TODD GEDAMKE:** Who possesses those data?
11
12 **GRACIELA GARCIA-MOLINER:** Well, I know that there were quite a
13 number of cruises that took part in St. Thomas in 2008 or 2009
14 or 2010 or thereabouts.
15
16 **SHANNON CALAY:** I asked Walter Ingram to prepare a report of any
17 fishery-independent information that exists and he is still -- I
18 mean the data deadline is not until December 14 on that and so
19 he has not given it to me yet, but it's not --
20
21 **GRACIELA GARCIA-MOLINER:** So he'll have it if it's in there.
22
23 **SHANNON CALAY:** If it exists, hopefully he will point it out to
24 me, because he apparently possesses all that information now.
25
26 **TODD GEDAMKE:** If we look forward at this tool -- Shannon, maybe
27 there is an aspect to this to where you look at improvements or
28 what the benefit of improved data collection would be.
29 Recruitment index, my first reaction is, oh, crap, here you go
30 again. They are so hard to get a real handle on and predicting
31 that, but we've been talking about -- Well, let's think lobster.
32
33 How would you do a recruitment index of lobster? Well,
34 recruitment doesn't need to be larvae. Recruitment could be
35 one-inch mesh with fishermen out there pre your assessment
36 period and you could generate one of those indexes.
37
38 I could continue to babble and give the Center about twenty
39 years' worth of explanation on some of this, but that's exactly
40 what this type of thing could do. This isn't reasonable in the
41 near future for us to be able to generate the recruitment index
42 and, if so, then you can just run this and see what would be the
43 benefit in the simulation or for looking forward.
44
45 **GRACIELA GARCIA-MOLINER:** The last thing has to do with the fact
46 that one thing that they are going to ask right away is how do
47 you take into account the many regulations that have been in
48 place for some of the years? That is going to be right on the

1 table right away.

2

3 **SHANNON CALAY:** That's a very intriguing question, even in the
4 bigger, richer assessment context. I mean it's very, very
5 difficult to actually handle the management regulations properly
6 in a data-rich assessment context, especially when you have bag
7 limits and size limits and trip limits and area closures all
8 occurring simultaneously.

9

10 The answer probably won't be entirely satisfactory. Frankly,
11 this is very data limited and there is not going to be the
12 ability of these current models for us to look at temporal
13 changes in selectivity.

14

15 If that's a big concern of the council, they can suggest as a
16 research recommendation that we improve the models by allowing
17 for a selectivity, but it can't be done as of right now.

18

19 **GRACIELA GARCIA-MOLINER:** (The comment is not audible on the
20 recording.)

21

22 **TODD GEDAMKE:** Yes, but if things are consistent, that is less
23 problematic.

24

25 **GRACIELA GARCIA-MOLINER:** I am just saying these are the
26 questions that I am thinking are coming.

27

28 **TODD GEDAMKE:** What Bill and Graciela just mentioned -- Shannon,
29 I have one piece of advice. Put one of those simulation runs up
30 there or generate one that just shows the beginning of time and
31 we see the population drop down and run it for a hundred years
32 and then a red line or a dotted line right at the point of
33 simulation in there.

34

35 The question comes up of how have you taken into account the
36 historical in there, you can put that one back up there and then
37 point to that section and say this model in its current format
38 will incorporate catch -- I don't know if it's -- You could put
39 that this regulation reduced catch or restricted catch and,
40 therefore, in this period that's where we can take a look at
41 these things.

42

43 Then as you move forward or if you wanted to do your recruitment
44 deviations, you could point to that same thing in there and show
45 another one and just show a zig-zag in the recruitment or peaks
46 in uncertainty.

47

48 If you explain the first part well, and you might want to cutoff

1 the drop from unfinished down to the beginning and so start your
2 imagine at year twenty rather than year zero, because that's
3 going to scare people, but that goes very well and you could
4 even put ten or fifteen of them at the end of your presentation
5 that you show different types of patterns.

6
7 **SHANNON CALAY:** All right. I will have to -- I don't have
8 graphics like that available right now.

9
10 **TODD GEDAMKE:** I can give you that.

11
12 **SHANNON CALAY:** That would be great, because I don't think we --
13 We didn't screen capture or save those graphics. I think we saw
14 some of them during SEDAR-46, but they're not in my archive of
15 images.

16
17 **TODD GEDAMKE:** Two weeks ago when we were presenting this in
18 California, we did the same types of presentation and I didn't
19 have images and I still don't have great ones, but I ended up
20 literally starting the whole meeting, after 3,000 PowerPoint
21 slides, with a piece of white paper and a magic marker and just
22 drawing it out.

23
24 **SHANNON CALAY:** That would be hard to do on a webinar.

25
26 **TODD GEDAMKE:** It would, but the nice thing there is that I
27 could redraw specifically with the question that someone asked
28 me.

29
30 **SHANNON CALAY:** That would be great if you could pass those --

31
32 **TODD GEDAMKE:** Variability and there's great variability and
33 then you look here and this is your simulation period and you
34 put recruitment deviations and show your variable and then we
35 project forward from here, given a closure and that closure is
36 going to show this sort of thing and just people visually can
37 pick up that's an increase and that's a decrease and there's
38 some variability to it.

39
40 **RICHARD APPELDOORN:** All right. Let's take a break.

41
42 (Whereupon, a brief recess was taken.)

43
44 **RICHARD APPELDOORN:** Let's resume again. I think that we were
45 done with the discussion on Shannon's review of what happened at
46 SEDAR and are scheduled to take the next steps in developing
47 island-based actions and alternatives.

1 **JOHN HOENIG:** Before we leave SEDAR, Shannon, in the end it's
2 six stocks we're doing?
3
4 **SHANNON CALAY:** Yes, in the end, we'll concentrate on these six
5 stocks, for the moment. We think there is enough that we're
6 going to have to do to explore scientific uncertainty that
7 frankly we don't envision introducing any new stocks at this
8 point.
9
10 **JOHN HOENIG:** We accomplished there two of the stocks?
11
12 **SHANNON CALAY:** No, we did all six with the DLM package, but the
13 MLE, I think we've got some issues still to get some of those
14 stocks implemented.
15
16 **JOHN HOENIG:** What's MLE?
17
18 **SHANNON CALAY:** Mean length estimator.
19
20 **JOHN HOENIG:** How many of the MLE stocks did you do the length-
21 based things to?
22
23 **SHANNON CALAY:** I think two is what we've seen.
24
25 **JOHN HOENIG:** And we think we're going to have all six? We'll
26 see.
27
28 **SHANNON CALAY:** We're hoping to have all six, but I think there
29 were some estimations and things that we have to reconsider or
30 consider.
31
32 **JOHN HOENIG:** I think they're still in play and so what will you
33 do if you don't have length-based for these? Will you just --
34
35 **SHANNON CALAY:** I don't know what we're going to do. We're
36 going to present all the plausible models that meet the criteria
37 to the SSC. We will basically go through the review process
38 with every model that we've completed at that time and meets
39 basic diagnostic criteria. If they're available, they will be
40 included and if they are not available, they won't be included.
41
42 **JOHN HOENIG:** But we will still have six stocks, two to six of
43 which will have mean length?
44
45 **SHANNON CALAY:** Right.
46
47 **JOHN HOENIG:** I am not sure with Meaghan's and your procedure
48 for calculating OFL -- That's not in the toolbox?

1
2 **SHANNON CALAY:** It's not in the toolbox at the moment, but we
3 have the -- We are intending to put that in the toolbox.
4
5 **JOHN HOENIG:** Okay, but if we have that, we will present that
6 too?
7
8 **SHANNON CALAY:** Yes.
9
10 **JOHN HOENIG:** But it just won't be guided by the toolbox?
11
12 **SHANNON CALAY:** Correct. I am not eliminating -- The DLM
13 toolkit was one tool, essentially, but I don't think we should
14 think about mean length estimators as anything but another data-
15 limited approach to consider. We just may not have the full
16 suite. We may have to consider what the diagnostics would look
17 like and what the level of -- How we're going to determine it's
18 appropriate or how to evaluate it.
19
20 **JOHN HOENIG:** Yes and that's what I was basically get at, is we
21 mind up with apples and oranges, but in this context, here's how
22 these data --
23
24 **JOE KIMMEL:** Mr. Chairman, I probably should have understood
25 this, but SEDAR -- You are going to do a separate SEDAR process
26 like this for the Gulf or Mexico and the South Atlantic?
27
28 **SHANNON CALAY:** Right now on the schedule for the beginning of
29 April of this year is the Gulf data-limited workshop and they've
30 done things a little bit differently, in that the data triage
31 aspect was not requested and they already gave us the stocks
32 that the want us to consider and so it's a little bit different.
33 It will be a little bit more efficient.
34
35 **JOE KIMMEL:** So it's not -- They will have a data workshop and
36 an assessment workshop.
37
38 **SHANNON CALAY:** We will still have that same process as usual,
39 but we will not -- There is a lot of preliminary work that went
40 into this just to -- The data triage tools we used to determine
41 what stocks to select and they went a different way with it and
42 just told us what stocks to select. The data is a little bit
43 more in the Gulf of Mexico.
44
45 **JOE KIMMEL:** So this -- It won't take as long as a normal SEDAR
46 process, because that's usually like a year?
47
48 **SHANNON CALAY:** I think that most of what will be time consuming

1 is kind of getting kind of these operational models and the
2 process in place and then once we actually kind of do the proof
3 of concept and determine whether this is a useful procedure,
4 even for our kind of cream-of-the-crop stocks, that I think that
5 we could do this approach fairly rapidly.

6
7 You know we can do far more species in one project calendar and
8 so our thought is that, if this is a useful process and the data
9 supports it, that it can be a pretty rapid assessment process.

10
11 **BILL ARNOLD:** Shannon, I asked Tom this at the SEDAR and I'm
12 curious what you have to say, but would it be possible to add
13 lobster in Puerto Rico as a separate stock? The reason I would
14 request that is because then you've got the same species in all
15 three islands.

16
17 **SHANNON CALAY:** If you look at the project schedule, our report
18 is due for internal evaluation on like the tenth of January and
19 so there really isn't time to develop new stocks.

20
21 **BILL ARNOLD:** Outside of the report, could you do it as
22 something to present to the council when you present these
23 things, so that you could give them an idea?

24
25 **SHANNON CALAY:** I can't answer that question. I mean that's the
26 kind of thing that would have to be negotiated through Bonnie,
27 because it's outside of our project schedules and it's not
28 trivial, unfortunately.

29
30 **BILL ARNOLD:** No and I'm not saying it is.

31
32 **TODD GEDAMKE:** I was going to ask you, would you willing to
33 provide how not trivial, like in man hours or days or weeks or -
34 - Just ballpark.

35
36 **SHANNON CALAY:** Honestly, if we had the data inputs and we had
37 already made the decisions about how to treat the gears and
38 which gear to select and what life history parameters to select
39 -- I mean this process used a working group to determine what
40 life history parameters to select and we don't have access to
41 that same level of evaluation now and it would be more if the
42 Southeast Fisheries Science Center picks their favorite
43 parameters.

44
45 **RICHARD APPELDOORN:** This is a species that we've already run --

46
47 **SHANNON CALAY:** If it's consistent with the others, then at
48 least we've got those decisions, but the problem right now is

1 that we're trying to finish the stocks that we have under a very
2 tight deadline and because the holidays are in the middle -- I
3 mean, effectively, we've got like two weeks now to finish up the
4 report and I would really, really probably counsel not to add
5 any additional stocks right now.

6
7 You know if you were able to convince Bonnie otherwise, Bonnie,
8 obviously, can tell me what to do, but it would not be my
9 preference to add additional stocks right now with the holidays
10 going on and people on annual leave.

11
12 **BILL ARNOLD:** I would not make that request. I just wanted you
13 to understand why I thought it would be advantageous.

14
15 **SHANNON CALAY:** The typical way that species get put on the list
16 for assessment is through the SEDAR Steering Committee and
17 that's a council process, essentially. There are council
18 members that are on the SEDAR Steering Committee and so the
19 Caribbean Council has members.

20
21 They have been kind of waiting to see what this procedure looks
22 like and whether it performs well, but the option is to put
23 assessment slots in for the Caribbean as early as 2016. If you
24 had species or stocks that the Caribbean wants assessed, they
25 could be assessed, probably as early as the second quarter of
26 2016. There are slots available for the Caribbean process, but
27 I think they were -- At least the last time I participated on
28 the SEDAR Steering Committee, they were kind of waiting to see
29 if this was going to be a useful process or not.

30
31 **RICHARD APPELDOORN:** So two things. One, do you think it's --
32 Is it a handicap that we only have two of the stocks being
33 looked at with the length-based approach?

34
35 **SHANNON CALAY:** I know, in speaking with Quang, he certainly
36 intends to complete the other stocks, but it's --

37
38 **RICHARD APPELDOORN:** But not necessarily in time for --

39
40 **SHANNON CALAY:** No, he intends to do it on time and submit it as
41 part of the process. We've negotiated with him, essentially,
42 that he will write a stand-alone report in the same project
43 schedule and we will cite that report and summarize it in our
44 final report through SEDAR and that was kind of negotiated to
45 preserve -- You know it is his work and he wants some
46 recognition for having done it, but our SEDAR reports are
47 completely anonymous.

1 We think that it will be ready, but he doesn't -- You know he
2 works for John and not for me and so I think certainly it is his
3 intention to complete the work.

4

5 **JOHN HOENIG:** He will have it done.

6

7 **SHANNON CALAY:** I suspect he will.

8

9 **JOHN HOENIG:** He's quite reliable. Of course, if he gets hit by
10 a car or something, that may change things a little bit.

11

12 **SHANNON CALAY:** In theory, we can assist. The reason that we
13 actually sought out the help is because Meaghan Bryan, who
14 typically does this for us, just had a baby two weeks ago and so
15 she is not available.

16

17 **RICHARD APPELDOORN:** The second question is how are we viewing
18 the results of the species of those six stocks?

19

20 **SHANNON CALAY:** Of the what?

21

22 **RICHARD APPELDOORN:** Those six stocks, if things work, are we
23 then saying, hey, this is now the formal state of these things
24 or is this still purely an exploratory exercise on how these
25 perform and regardless of what comes out, that's not going to be
26 considered a full assessment of these?

27

28 **SHANNON CALAY:** I really think that's SSC provided. I mean the
29 way we typically operate is that the councils and the SEDAR
30 Steering Committee put stock assessments on the calendar and we
31 conduct the assessment through the SEDAR process and our SSCs
32 ultimately evaluate the assessments and determine whether they
33 are useful for management advice.

34

35 **RICHARD APPELDOORN:** I guess I am asking about what was the
36 intention going in. Was this purely an exercise in exploring
37 the models and we're not really concerned about what's going to
38 come out or are we going to do the best we can or were we
39 actually -- Let's try to the point that this really is a full-
40 scale assessment using these methods and if it works, we are
41 going to present it as such, relative to the process you just
42 cited?

43

44 **SHANNON CALAY:** According to the terms of reference, the
45 objectives --

46

47 **RICHARD APPELDOORN:** I found the terms of reference not clear on
48 that.

1
2 **SHANNON CALAY:** I probably specifically unclarified the term of
3 reference, because it wasn't clear to me whether we would be
4 able to develop the management advice.
5
6 **RICHARD APPELDOORN:** Yes and I'm asking exactly for that reason.
7
8 **SHANNON CALAY:** I think that what we can do is -- I actually
9 think the long and short of it is that we can use this tool to
10 develop management advice and we can use this tool to determine
11 which of those data-limited approaches meet certain diagnostic
12 criteria and management objectives. That is not the problem.
13
14 The problem, in my mind, is evaluating the data quality and the
15 assumptions that we've made and that will really determine, in
16 my mind, whether this SSC thinks that we can use these
17 approaches for development of management advice, whether they
18 think they can accept the assumptions that are necessary to use
19 these tools.
20
21 **RICHARD APPELDOORN:** That is still from the point of view of
22 evaluating the tools and not the actual outputs of the stocks
23 that were used to test this.
24
25 **JORGE GARCIA-SAIS:** Who is "they", the council?
26
27 **SHANNON CALAY:** Well, it kind of remains to be seen. I only
28 know my experience in the Gulf and in the Gulf of Mexico, it's
29 the SSC's prerogative to accept or reject the assessment and the
30 council can, in certain cases, they can make requests for
31 further evaluations, if they have concerns, but the SSC accepts
32 the assessment for management advice.
33
34 First, they accept whether it's best available and then they
35 accept whether it's useful for development of management advice.
36 It's almost always the best available, because there is no other
37 one available and so that first bit, in my mind, is unnecessary,
38 but if it's acceptable for management advice, then the SSC
39 determines OFL and ABC and they do it in the Gulf through what
40 they call a tiers and dimensions table and an ABC control rule
41 and they had working groups that created those products.
42
43 **CHURCHILL GRIMES:** It's essentially the same in the South
44 Atlantic.
45
46 **JORGE GARCIA-SAIS:** So then the council determines the ACL?
47
48 **SHANNON CALAY:** Right and so the SSC, by law, determines OFL and

1 ABC and the council is not really allowed to exceed it, but the
2 council is absolutely able to determine ACL and ACT, which they
3 can set equal to or less than ABC.

4
5 **RICHARD APPELDOORN:** This is going beyond what I'm asking. Will
6 the final report say we've explored these methods and find this
7 subset to be available and we're recommending that these could
8 be used to assess stocks in the future or is it going to say
9 we are using methods to assess these stocks and we have found
10 that these stock are this and do you accept that or not?

11
12 **SHANNON CALAY:** I mean I'm kind of projecting here, because we
13 haven't finished these, but I think what our intention to do
14 right now is to write the report as we're going to describe the
15 data and describe its weaknesses and concerns we have about the
16 data and the second section is going to be the stock assessment
17 and we'll describe the methodologies that we used for advice and
18 we'll talk about any models that we found to be unusable for any
19 reason and so those will be -- We will tell you those ought to
20 be rejected and we will tell you why. Then what is left will be
21 plausible model results that we feel are -- If you can support
22 the assumptions we've made --

23
24 **RICHARD APPELDOORN:** Which you will have already commented on.

25
26 **SHANNON CALAY:** We will have commented on, but what we don't
27 typically do, to be honest, is say here is a result and don't
28 use that. We say here are the results and here are our concerns
29 and it's up to the SSC to determine --

30
31 **RICHARD APPELDOORN:** After that step will be the review panel
32 giving their --

33
34 **SHANNON CALAY:** Right, the review panel will have their say.

35
36 **RICHARD APPELDOORN:** They will have their say and all those
37 things you just mentioned as well.

38
39 **SHANNON CALAY:** Yes and the review panel may well -- This is
40 kind of going way off the script and I don't really have a
41 script, but you know what I mean. The review panel has
42 essentially some number of CIE reviewers and some number of SSC
43 members and in the Gulf, it's three and three and I don't know
44 what you've negotiated in the Caribbean.

45
46 Some of the problems we have encountered in other assessments is
47 that the CIE can come from an extremely different perspective.
48 They may come from a perspective where this is just complete

1 nonsense and you don't have any information and this should be
2 nothing or they may come from a perspective where they're very
3 accustomed to borrowing parameters from other models.

4
5 We don't really know until we see how that operates and so we
6 will get probably a good deal of comment on diagnostics and
7 things like that, like the diagnostic performance, but they can
8 accept -- They are not actually allowed to accept or reject an
9 assessment. They are allowed to express what they -- They can
10 certainly criticize, and they do at times, but it will still
11 ultimately be, in my mind, an SSC decision, because sometimes
12 those review workshops just lack any regional perspective, to be
13 honest.

14
15 They are very international and sometimes they just don't see
16 things the same way that this SSC might and so it's anybody's --
17 It's really anybody's guess, largely, what comes out of the
18 SEDAR review workshop.

19
20 **JOHN HOENIG:** Can I jump in, because I am not sure we have
21 answered Rich's question. There is two things going on. There
22 is here are the data for the stock and this is our point
23 estimate of what we think is going on. You can run that through
24 some kind of a rule that says -- So that it says here is the OFL
25 and the ABC.

26
27 The other part you need to know is that rule you're using, how
28 does it work? That's where you have the simulations and so
29 basically I think you run it twice, once to say if this is the
30 procedure you want to use, we will put in all kinds of errors
31 and this and that and that and see if it's robust and so this
32 method can perform well. Then you say, okay, but we don't think
33 L infinity is here and we think it's here and we don't think
34 this is there and we think it's there and so using the best
35 estimate of what's happening for this stock, what's your final
36 number.

37
38 **SHANNON CALAY:** Right.

39
40 **JOHN HOENIG:** But that final number, is it safe? Is it good?
41 Is it reliable? That's where the simulation part comes in and
42 so when Richard is saying I'm a little confused and are you
43 recommending methods or are you going to be telling us what's
44 going on in the stock, I think you're going to be doing both.

45
46 You're going to be saying this method worked the best and here
47 is what it says about the stock and this method worked a hair
48 less good or worked better for this metric, but worse for that

1 metric and, by the way, it says that and -- When you say that
2 there's no decision about best method, I think that's actually
3 inaccurate.
4
5 **SHANNON CALAY:** We will describe the strengths and -- We will
6 describe the qualities of the methods. We will describe
7 essentially how robust we thought they were and appropriate they
8 are to be used.
9
10 **RICHARD APPELDOORN:** So let me ask a follow-up question now.
11 The next time when we come up with the different species or
12 different stocks of that species, what do you not have to do all
13 over again? I know what happens when the same one comes up, but
14 what happens when a different one comes up?
15
16 **JOHN HOENIG:** Can I answer that and you tell me if I've got it?
17
18 **SHANNON CALAY:** Sure.
19
20 **JOHN HOENIG:** I think you don't have to say whether this method
21 works well, because we've already done that. As long as the
22 data you're putting in is close to what you -- Within the range
23 of what you put into the simulation the last time, you already
24 know that the method works well in this situation and so you
25 update the data and you run it through and you say here is your
26 --
27
28 **RICHARD APPELDOORN:** So it's not going to be --
29
30 **JOHN HOENIG:** We don't have to do a Monte Carlo simulation every
31 time to see whether this method still has the mathematical
32 properties of the robust in this metric and less robust in that
33 metric.
34
35 **RICHARD APPELDOORN:** As long as the values coming in for that
36 new species are within the bounds of what --
37
38 **JOHN HOENIG:** Within the bounds of what we have examined. Am I
39 right?
40
41 **SHANNON CALAY:** Yes, I think you're right. I mean it's an
42 interesting --
43
44 **JOHN HOENIG:** Damn, I understood something.
45
46 **SHANNON CALAY:** You know obviously we will have to create
47 operational models for each stock that we intend to assess.
48

1 **RICHARD APPELDOORN:** By operational, you're talking about the
2 data that goes into it?

3

4 **SHANNON CALAY:** And the structure, but --

5

6 **JOHN HOENIG:** Something you sort of glossed over, but, as I
7 understand it, you are saying we think L infinity is this, but
8 it could be between there and there and we think K is this, but
9 it could be between there and there and we think blah, blah,
10 blah and we think recruitment variability is this and then it
11 generates a population trajectory and so that is unique to each,
12 right?

13

14 **SHANNON CALAY:** Exactly and so each -- I think we will have to
15 have a data workshop for every new stock, because you will want
16 some transparency and ability to participate in decisions about
17 life history information.

18

19 You know the catches -- Well, we'll have to determine what is
20 the gear we're going to use. There are certain things we'll
21 have to do to create the operational model for each stock and
22 once we have operational models for all the stocks we intend to
23 assess in the Caribbean, and maybe we'll have some insights
24 about how many that might be, to update those assessments will
25 be very rapid.

26

27 We just need to put in the latest information for all the model
28 inputs, but we would only need to readdress things like life
29 history if the -- Usually how that works is the council or your
30 SSC or whoever informs the council and the council, who
31 participates in the Steering Committee, would say we feel that
32 we should have another data workshop to reconsider some of these
33 inputs and that would be kind of like our benchmark assessment.

34

35 If you felt that we had done the best available science and
36 there was no need to reevaluate them, then we could just update
37 at that point and it would be a very quick process and it would
38 not require a data workshop.

39

40 **JORGE GARCIA-SAIS:** I mean if you got the -- On the workshop, if
41 you had these runs of the model with the different input
42 parameters, different values within the range that we have
43 available, then we can see how sensitive the models are to the
44 different inputs and that would help a lot, because that's a
45 good reference point and we can then participate a little bit
46 more, because otherwise only the person running the models
47 really knows what it is responding to.

48

1 **SHANNON CALAY:** All of the webinars and all of the processes for
2 SEDAR are public and so you can always participate in them.
3 It's sometimes tricky to find out how, but if you contact me or
4 Julie Neer, who is the coordinator for SEDAR, she can put you on
5 the participant list.

6
7 There is a little bit of -- There is an operating procedure that
8 stands in the way of actually speaking on a webinar unless
9 you've been identified as a panelist, which we might have to
10 readdress, because I would imagine Quang will want to speak on
11 the webinar when he discusses his own results, for example.

12
13 **JORGE GARCIA-SAIS:** I have been there.

14
15 **SHANNON CALAY:** Yes and so have I. I have actually been told
16 that I can't participate, but -- So we will -- I mean, by the
17 terms of reference, we are required to show this sort of
18 information about uncertainties and how robust and sensitivities
19 and so you will see all of that or we have not met the terms of
20 reference.

21
22 **BILL ARNOLD:** Shannon, can we discuss this within the
23 development of these new FMPs, because the way I see this is
24 what the SSC and the council is going to end up with is --
25 First, it's interactive with how we group these species and so
26 you've run through six species and of those six species, four of
27 them will probably end up in complexes with other species that
28 haven't, and may not for a while, have this process applied to
29 them.

30
31 In fact, some, and possibly many of them, won't even be suitable
32 candidates for these types of approaches, because the data are
33 lacking, inadequate or completely lacking. That's the first
34 thing. The first thing is you don't even know what the complex
35 structure is going to be and then you don't know which within
36 each complex is actually going to be suitable for any of these
37 data-limited models and it's probably going to differ from
38 island to island.

39
40 Then, this could take several years to process through. Using
41 Mike's just rough -- Just as a point of conversation, we're
42 talking about about ten complexes. I think that's maybe what we
43 will end up and so it could take two or three years to get
44 through that and maybe you need to reign in my expectations, but
45 I was not planning on having another two or three-year process
46 before these FMPs are put into place.

47
48 So do we set this up in our alternatives, which is ultimately

1 what we're going to have to deal with, within Action 3 that we
2 were possibly going to talk about in a little while?

3
4 So one alternative is you apply the approach and that
5 alternative would be the preferred alternative for spiny lobster
6 and maybe for the deepwater snapper group, and I am just making
7 these up, but you pick three or four groups or two groups or
8 maybe just one that you could actually get it in place for and
9 not just to finish the FMPs, but to take out to public hearings
10 and say, okay, here are the different alternatives and here is
11 what the data-limited modeling approach would look like and
12 maybe we take this and apply every alternative to the same
13 species.

14
15 Then here is another alternative that is how we did it for the
16 2010 species and we do a year sequence and we do an MSY proxy
17 and say this is how that would look and maybe there is another
18 method we could use as an alternative or maybe not.

19
20 I don't know, but we take that out to public hearings and
21 ultimately we build in a partial outcomes into these FMPs and
22 part of the FMPs is that the old ACLs still apply for all the
23 species that have not yet been dealt with and those old ACLs
24 stay there until the process -- Until we have time to apply the
25 process and develop new reference points and ABCs, of course,
26 critically, and ACLs for those species, again maybe taking
27 several years after the new FMPs are actually in place, which I
28 don't think is a problem, but I just want to make sure that I've
29 got a thought process here that is actually workable.

30
31 **SHANNON CALAY:** I will respond, but did you want to ask a
32 question that's related?

33
34 **KEN STUMP:** A clarifying question, yes. Based on what you just
35 said, Bill, I mean if you had some species that we're using the
36 data-limited method approach and others that are using the
37 current approach, wouldn't the SSC also need to develop an ABC
38 control rule that specifies that there are different tiers?
39 Otherwise, I don't see how you would --

40
41 **BILL ARNOLD:** Actually, we've talked about the tiers and that's
42 the way -- I initially said we may end up with tiers and it may
43 not be that they slowly transition. Some of these groups may
44 never transition and they may have to be tiered out at a
45 different level, which is like the not data poor, but data non-
46 existent level. You approach those completely differently.

47
48 **KEN STUMP:** I just don't see how the SSC, if it's only going to

1 meet in March and you want to finish this before the end of the
2 year or by the end of next year, then they don't have a whole
3 lot of time to really hash this out. I mean other SSCs have
4 taken quite a bit longer period of time to develop control
5 rules.

6
7 **BILL ARNOLD:** They have a control rule for the old way of doing
8 things and so two of the alternatives could be Alternative A,
9 new way, and Alternative B, old way. We can apply Alternative A
10 to the ones we can.

11
12 **SHANNON CALAY:** That worries me. We would have to get some
13 advice, because it's the SSC's responsibility to create OFL and
14 ABC and if the SSC chose to accept stock assessment information,
15 it would -- I think you would use it for ABC and OFL and so then
16 your ACLs that you determined from recent landings history could
17 only be used if they were less than that and so I think there is
18 some legalities here that we need to consider.

19
20 **BILL ARNOLD:** Less than an unknown number.

21
22 **SHANNON CALAY:** Well, less than whatever your SSC determines as
23 ABC, for example.

24
25 **BILL ARNOLD:** They would use the process to determine that ABC
26 and they have an alternative process --

27
28 **SHANNON CALAY:** I am saying I don't think you could go in front
29 of the council and say it can be the stock assessment results or
30 it can be what we've always done. I think your SSC should
31 decide whether the stock assessment result is better than recent
32 landings history alone and if they decide it's better, then
33 that's ABC. Then your council can only choose a value equal to
34 or less.

35
36 **BILL ARNOLD:** I am not sure that's not what I was saying. You
37 say Alternative A is the stock assessment approach.

38
39 **SHANNON CALAY:** I am thinking about regulatory amendments and
40 things like that, that are more a council product.

41
42 **BILL ARNOLD:** Okay and so you say -- Regardless of the --
43 Alternative A is the stock assessment approach and for the
44 species for which we have applied it and have developed ABCs,
45 that's the method that should be the council's preferred method.
46 We did this in the other amendments. We had different choices,
47 different preferred alternatives, for different species groups.

48

1 Then you say now we've got Alternative B, which is the recent
2 landings approach. We use that approach for species for which
3 either Alternative A is not appropriate or we haven't had time
4 to apply Alternative A.

5
6 In the former case, where it's not appropriate, it will never be
7 applied and in the latter case, where it is appropriate, those
8 new ABCs will be generated as soon as everybody has time to get
9 the job done and generate those new ABCs. Now, I am asking and
10 I'm just wondering.

11
12 **SHANNON CALAY:** I think largely we're on the same page, but I
13 think rather than calling them alternatives that you would call
14 them like Tier 1 ABC equals and then you would describe or OFL
15 equals and ABC equals and then you would describe how this SSC -
16 -

17
18 **BILL ARNOLD:** Okay and so that helps me, because that's the way
19 we constructed it. Basically we didn't call them tiers, but
20 within an alternative, you had multiple options to walk down
21 stairs to get to the bottom, which was the ACL. Then we have
22 another alternative, which followed basically the same process,
23 but, for example, may have used a different sequence of years or
24 some basic starting point that was different and that was a
25 separate alternative.

26
27 **SHANNON CALAY:** As long as those alternatives for OFL and ABC
28 specifically are being evaluated -- Essentially, the process is
29 the council says create a control rule and then the SSC creates
30 a control rule and the council does have the prerogative to
31 evaluate that control rule and so once it's adopted, that
32 control rule is the way we're going to conduct business.

33
34 The way we've always operated, at least in the Gulf, and that's
35 my main experience, is that once you operate through that
36 control rule, you are not presenting the council with any
37 options that relate to what that ABC value is. They can reduce
38 it if they are worried about management implementation and they
39 can decide things like allocation and management regulations
40 that are going them to that catch value, but I don't want to
41 present it to the council like you can take what the SSC has
42 accepted as best available science and ignore it, because that
43 seems --

44
45 **BILL ARNOLD:** That's not what I'm trying to get at with this.

46
47 **SHANNON CALAY:** No and so when you say alternative --

48

1 **KEN STUMP:** Isn't your alternatives going to have to be
2 different choices of ABC control rules that have been vetted
3 through this process? The alternatives the council would
4 consider or that you might analyze as the agency under a NEPA
5 document are going to have to be developed and that's why I am
6 wondering time-wise how you do that in this timeframe.

7
8 **SHANNON CALAY:** I agree with you and I think that was something
9 that -- I don't think even the folks who -- When we embarked
10 upon this process, not everyone was involved in the planning
11 understood that -- There was nothing in place, no structure in
12 place, to use stock assessment advice in the Caribbean
13 currently. Essentially you've got the ACL control rule and it's
14 based on recent landings history alone.

15
16 We are in the position where we can -- Our terms of reference
17 tell us that we are meant to provide management advice, if
18 possible, and that will be a yield. That will be an acceptable
19 yield, essentially.

20
21 There is no framework to use that information right now and
22 you're right that it probably takes more time to create that
23 framework and so my guess is that the information we create
24 can't be automatically used immediately and so what we would
25 probably do is say this process is useful and we'll create the
26 framework to use the information in the future and then as soon
27 as that framework is ready, then we will get this process
28 operating annually to conduct some number of stock assessments
29 annually in the Caribbean, through updates or through
30 benchmarks.

31
32 **BILL ARNOLD:** Just to make sure -- The council creates the
33 framework and you guys create the data that will fill that
34 framework.

35
36 **SHANNON CALAY:** What I'm talking about is the way you're going
37 to manage and that is, in my mind, a partnership between the
38 council and the SSC. Usually what happens is the council asks
39 their scientific advisory panel, which is you, to create that
40 framework, which would be something like what we would call a
41 control rule and that lingo doesn't mean the same thing from one
42 region to the next.

43
44 Then the council would have to determine whether they wanted to
45 adopt it and so there is a partnership there, but once that
46 framework is adopted, it would say if the -- It would be
47 something like if you have the stock assessment results that the
48 SSC has determined is better than recent landings history alone,

1 then the OFL is calculated this way and ABC is calculated that
2 way. Then the next step down in this --

3

4 **BILL ARNOLD:** Here too.

5

6 **SHANNON CALAY:** For those stock assessments that -- If we
7 present you with an approach and you say it's not acceptable,
8 it's essentially rejected for a stock, then you would
9 essentially go back and revert to what you've got in place.

10

11 The complication, as you're well aware, is these species
12 complexes and so the long and the short of it this is a paradigm
13 shift in the Caribbean and it's not something that I can on the
14 fly tell you what an ideal structure is for how this should
15 operate.

16

17 I have identified that I am concerned that we don't have that
18 procedure right now and it would be much more appropriate for
19 the council to recommend that they construct a working group
20 that will create this framework.

21

22 In the past, when we've done this in the Gulf and South
23 Atlantic, that was a partnership between the SSC and the Science
24 Center and SERO and then it was ultimately reviewed and adopted
25 with some modification by the council and that was also a
26 negotiation back and forth.

27

28 **KEN STUMP:** The councils have mostly had the responsibility for
29 developing any risk policy and the tolerance for risk of
30 overfishing and less than 50 percent and so other than that,
31 every ABC control rule, which is required, is developed in every
32 region primarily by its SSC.

33

34 **SHANNON CALAY:** Right and our participation in that process in
35 the Gulf was basically advisory. We didn't have any formal role
36 in voting on it or anything like that, but we just provided some
37 information and we provided technical experience and that's
38 about it.

39

40 I think in the Gulf, frankly, it took forever. I mean it took
41 like two years before we had that framework in place and part of
42 that was that -- Well, we eventually ran up against a hard
43 deadline and had to just adopt something that nobody was fully
44 satisfied with and ever since then they have had a sometimes off
45 and on again functioning ABC control rule working group that has
46 reevaluated and modified that control rule when necessary.

47

48 What you will often find out is that what you have put together

1 doesn't function as well as you thought it would when you
2 actually start trying to use it. This is a process. If we're
3 going to use stock assessment information, it's going to take a
4 process to get these tools in place and I don't think it should
5 take two years here, but you may have to make that -- You may
6 just have to do it and see how it functions and be prepared to
7 modify it if necessary.

8
9 **JORGE GARCIA-SAIS:** I see a priority in terms of -- I think that
10 we are in need of another tool aside the ACL process tool that
11 we have applied here for stock assessments and for regulatory
12 purposes of these fisheries, because there are several species
13 that are that I perceive that we're going to keep having
14 problems of going over the limits and we need some other tool to
15 see if that ACL is right or is below or is above what -- You
16 know something else that uses another reference point.

17
18 For example, in Puerto Rico, for Snapper Unit 2, I believe that
19 it's high priority. Another priority that I believe that these
20 other methods may have are in the terms of things like the
21 wrasses that we don't have now. An ACL of seven pounds is not
22 an ACL. That's nothing and really we don't have a number for
23 that and we don't have data. We don't have an ACL for wrasses,
24 which hogfish is a very important target species and it may
25 evolve in different directions in the future.

26
27 That type of approach, now that we have really landings-poor
28 data, that approach may serve us to get to an ACL which is much
29 better than what we have and those are the things that I believe
30 that this approach may serve as a helping tool towards modifying
31 the regulatory structure that we have right now.

32
33 **SHANNON CALAY:** Well, we'll see. I mean I want to -- The ACL
34 concept, I think you know, was Congress and the new reauthorized
35 act and it isn't really an appropriate tool for all places and
36 the Caribbean and the Pacific Islands are two places I can name
37 where they probably should have been a little more creative and
38 for years and years, Todd and I received the advice that there
39 was absolutely no flexibility and that by law we had to
40 establish an ACL through some structure for every stock in the
41 FMP or a complex.

42
43 You know this is purely -- I have started to hear of some
44 possible flexibility and I have basically started to hear that
45 they may be open to alternative management approaches, as long
46 as they have identified performance metrics that could actually
47 be tracked.

48

1 You still have to put an ACL on the books, but you can actually
2 manage through alternative procedures and that's the first time
3 I have ever heard of this concept. It's always been you must
4 manage your ACLs, you must, must, must. Now I'm starting to
5 hear this reality that's sinking in that there may be areas for
6 which that's not accomplishing the objectives.

7
8 I do think we should start thinking about, in a regional
9 context, what other sorts of management metrics might be more
10 easily, inexpensively, and reliably measured to be able to make
11 some intuitive guesses as to how the fisheries are actually --
12 Whether they are being depleted or whether they are improving,
13 because catch is really not a measure that is a very good
14 performance metric.

15
16 **JORGE GARCIA-SAIS:** This approach seems appropriate.

17
18 **SHANNON CALAY:** You've got socioeconomic considerations and it's
19 affected by all kinds of things that are unrelated to the
20 abundance of the stock. That gets into -- That is just kind of
21 the philosophical problem I have with ACLs.

22
23 I think one thing we've talked about a great deal at the Center
24 and I can blame Kevin for it, because it's probably his idea
25 initially, but you know we've got enough balls in play going on
26 in the Caribbean right now.

27
28 We've got an idea where we might be restructuring the species
29 complexes and restructuring FMPs and developing management
30 advice through a stock assessment context and it's probably a
31 good time to start thinking about a strategic plan for
32 management operations -- You know the whole management process
33 in the Caribbean on a short-term, longer-term, medium timeframe.
34 What do we intend to do in the next three years and what do we
35 intend to do in three to five years and what do we intend to do
36 ten years from now?

37
38 It's probably a really ripe time to be coordinating some kind of
39 an activity across the region where we're talking about this
40 together instead of basically SERO doing one thing and the
41 Southeast Fisheries Science Center doing another thing and they
42 may not all be cooperating well together.

43
44 You know all of these priorities and objectives that we have in
45 mind, we may not be walking down the same road together and so
46 maybe we could do that through some kind of a formal workshop,
47 but I think it's ripe to start thinking about a true strategic
48 plan for management in the Caribbean, in the U.S. Caribbean, and

1 how do we intend to do it or how we hope to do it.

2

3 **JOHN HOENIG:** I think that what you want to do is get some
4 experience under our belts, as in okay, we have these tools and
5 see how well it worked here and then, once we have some idea of
6 what we can do, then --

7

8 **SHANNON CALAY:** I do totally agree with you that it would be
9 more appropriate to do it following our experience with this
10 data-limited workshop, but, in any case, hopefully there is some
11 motivation to actually collect the sort of information we're
12 going to need to actually look at stock assessments in the
13 Caribbean.

14

15 **JORGE GARCIA-SAIS:** For example, take the case of the wrasses.
16 If we follow the pathways of the ACL determinations, it's going
17 to take another five or six years and we're going to be having
18 the same problem year after year on the overages of the catch
19 and we are going to keep saying the same thing, that it was
20 because of reporting problems and this and that and the next
21 year the same thing.

22

23 We need another tool to actually see if we can develop some
24 other criteria that is reasonable. We talk to the fishermen and
25 we talk to the fishers or any other indicator parameter that is
26 in the very direction that we're going right now.

27

28 **BILL ARNOLD:** Shannon, in the meantime, we need to determine if
29 and how we're moving forward with these FMPs and some kind of
30 reasonable timeline for their development and if it's going to
31 take three or four years, there are people that need to know
32 that.

33

34 **SHANNON CALAY:** I don't think it needs to take three or four
35 years. You just need to have the flexibility in your --

36

37 **BILL ARNOLD:** I agree with that. I think that's the best
38 approach.

39

40 **SHANNON CALAY:** To utilize stock assessment advice if it is
41 available.

42

43 **BILL ARNOLD:** When it is available, if and when.

44

45 **SHANNON CALAY:** Right.

46

47 **BILL ARNOLD:** Because there is a timeline for that too and so it
48 may not -- We could get the FMPs in place and the management

1 advice may not be available for another year and we want to be
2 ready to incorporate it when it is, but we want to be able to
3 operate until it is.

4
5 **SHANNON CALAY:** Yes, you want to be able to operate with what
6 you're doing now, but you want to have the flexibility to
7 incorporate other approaches that are --

8
9 **BILL ARNOLD:** So we are completely in agreement on that, because
10 that's what I am trying to do.

11
12 **SHANNON CALAY:** Absolutely and I think that you can retain
13 species complexes. Just it depends on exactly how you're
14 creating the complex ACL and that may mean -- You may have some
15 members of the complex for which the ACL is from a stock
16 assessment and others that are from recent landings history and
17 we just have to be sure that that can be -- That your species
18 complex ACL can be calculated from that mixture of results.

19
20 **BILL ARNOLD:** You mean legally or practically?

21
22 **SHANNON CALAY:** Well, practically is easy. It's just we have to
23 make sure that it's possible --

24
25 **BILL ARNOLD:** That it passes muster.

26
27 **SHANNON CALAY:** -- in your framework and that it's acceptable to
28 the SSC and to the council, that that's the methodology and it's
29 acceptable.

30
31 **BILL ARNOLD:** Right. These are the things that the SSC should
32 be thinking about. These are the considerations that should be
33 brought to the council so that we can make progress on it and
34 these are the kinds of conversations that need to happen at this
35 meeting and not details about what an ACL would be for lobster
36 or anything like that, but these general concepts at this
37 meeting of what's important.

38
39 **SHANNON CALAY:** Is it the council meeting that you're talking
40 about or --

41
42 **BILL ARNOLD:** The council meeting, so that they can understand
43 where we're going with this and provide us with the authority
44 and guidance to go down that path and not be surprised five
45 months later at the next meeting.

46
47 **SHANNON CALAY:** Right and that is exactly why I came here and
48 exactly why I had hoped to go to the council meeting, is just to

1 get the notion, you know really to introduce the idea, that this
2 is -- If we do at some point now or in the future decide that we
3 have an effective assessment methodology that can actually
4 provide you with OFL and ABC, that the management framework
5 needs to be flexible enough to use it. That's my main point.

6
7 **KEN STUMP:** Bill, if your timeframe is to try to get something
8 done in the next year, then it would seem that really the
9 council should at this meeting next week -- If the SSC's only
10 opportunity is to have this discussion in the spring, is for the
11 council to say next week that we want the SSC to embark on the
12 development of a simple control rule that would allow for the
13 use of this information as an alternative approach, so that that
14 simple control rule could be built in any kind of timeframe as
15 they take up the issue of reference points.

16
17 I mean how you do it is -- There is a lot of flexibility. ABCs
18 are developed differently using different types of control rules
19 around the country and what's not negotiable is that you guys
20 have to specify ABC, but how you do it, there is a lot of
21 flexibility in that.

22
23 So if you have to have -- I think Shannon is right that you have
24 to have a control rule in place in order to use this information
25 and that discussion needs to start like yesterday, if you're
26 going to stick to doing this over the next year.

27
28 You can modify the control rule once you go with it. The South
29 Atlantic did the same thing recently with a regulatory amendment
30 that I know about to add the use of landings-only data for data-
31 poor stocks and so once they had built the rule, which took some
32 time, they then could amend it periodically to put another tier
33 in to account for a different method.

34
35 **SHANNON CALAY:** Right and so I think, as far as the timeline is
36 concerned, that no one likes to waste their time and spin up to
37 something that doesn't ultimately result in anything necessary
38 and if there is the luxury, it would be efficient to wait to see
39 how these models actually perform and whether the SSC thinks
40 they are useful at this time.

41
42 Now, if they are not useful at this time, that doesn't mean they
43 will never be useful, but it just means that we have to invest
44 more in the data collection activities that these models
45 require, but if these models, after -- Basically, we could be
46 ready as soon as April to show them to the SSC, but if they are
47 determined to be useful, then we would have to pretty quickly
48 decide how we're going to create a new management framework.

1
2 **BILL ARNOLD:** Alternatively, we can anticipate success.
3
4 **SHANNON CALAY:** We can anticipate and it may be that we don't
5 use the flexibility right away. It may be that we use recent
6 landings history for some period of time, because, like I said,
7 there is no guarantee that these approaches will be useful yet.
8
9 It may be that we create the flexibility now and just wait for
10 the ability to use that flexibility, but if we're smart about it
11 -- I mean I honestly do think you can create a pretty flexible
12 control rule that just basically says to use -- You don't have
13 to be too specific about what a stock assessment is.
14
15 It could be a data-rich analogy, but it's much more likely in
16 this area to be a data-limited methodology, but you don't have
17 to specify which is which if you don't feel the need to. You
18 just have to have the ability to use ABC from some other
19 procedure than recent landings history alone if it's available.
20
21 **BILL ARNOLD:** The guidance on the ABC is not guidance directed
22 to -- This guidance is directed to the SSC, because they are the
23 ones that develop the control rule. I don't develop the control
24 rule.
25
26 **SHANNON CALAY:** No, it's the SSC that develops the control rule.
27 I am looking at you, because you're just right there and we're
28 talking, but yes, it's an SSC responsibility and the Center and
29 SERO could participate if the SSC found that useful, but we
30 don't actually do it.
31
32 **BILL ARNOLD:** The message that I would like for them to receive
33 is that the SSC needs to start working on this, because it will
34 take a while, and I don't know how they're going to go about
35 doing it, because they don't meet very often.
36
37 **SHANNON CALAY:** The SSC, I suppose, can recommend to the council
38 that they see a need to introduce this new flexibility and the
39 council can --
40
41 **BILL ARNOLD:** Right and so that's a recommendation that should
42 be written up now for presentation. I mean I would hope that it
43 would be written up now for presentation next week.
44
45 **GRACIELA GARCIA-MOLINER:** I can start typing.
46
47 **TODD GEDAMKE:** Just write "recommendations from Bill's advisory
48 panel". We are just getting into aspects of your amendments and

1 your pieces and what I am really --

2

3 **BILL ARNOLD:** No, we're talking about the SSC's control rule.

4

5 **TODD GEDAMKE:** Okay.

6

7 **BILL ARNOLD:** I am trying to get across the bridge to get to the
8 other side.

9

10 **RICHARD APPELDOORN:** Bill, are you jumping ahead?

11

12 **BILL ARNOLD:** Well, maybe. This is Action 3 and we can talk
13 about it later and it's totally up to you guys, but this does
14 relate to Action 3. Absolutely it relates to Action 3 and if
15 you want to wait until tomorrow to talk about Action 3, that's
16 your call.

17

18 **RICHARD APPELDOORN:** Well, we're significantly beyond five
19 o'clock.

20

21 **BILL ARNOLD:** Sure. I am tired too.

22

23 **RICHARD APPELDOORN:** I was thinking you could stay here and work
24 it up overnight.

25

26 **BILL ARNOLD:** You guys want me to develop your control rule?
27 Okay.

28

29 **RICHARD APPELDOORN:** I didn't say that. I said your
30 presentation of it.

31

32 **BILL ARNOLD:** It's already there. Okay. Sorry to drag it out,
33 guys.

34

35 **RICHARD APPELDOORN:** I am recommending that we break.

36

37 (Whereupon, the meeting recessed on December 9, 2015.)

38

39

- - -

40

41

December 10, 2015

42

43

THURSDAY MORNING SESSION

44

45

- - -

46

47 The Scientific and Statistical Committee of the Caribbean
48 Fishery Management Council reconvened at the CFMC Headquarters,

1 San Juan, Puerto Rico, Thursday morning, December 10, 2015, and
2 was called to order by Chairman Richard Appeldoorn.
3
4 **RICHARD APPELDOORN:** Good morning, everybody. It's day three of
5 the SSC and, again, a roll call, voice roll call. I am Rich
6 Appeldoorn, SSC Chair.
7
8 **VANCE VICENTE:** Vance Vicente, SSC member.
9
10 **MIKE LARKIN:** Mike Larkin, Southeast Regional Office.
11
12 **JORGE GARCIA-SAIS:** Reni Garcia, UPR Mayaguez and SSC member.
13
14 **TODD GEDAMKE:** Todd Gedamke, SSC member.
15
16 **CHURCHILL GRIMES:** Churchill Grimes, SSC member.
17
18 **JOHN HOENIG:** John Hoenig, SSC member.
19
20 **JOE KIMMEL:** Joe Kimmel, SSC member.
21
22 **SHANNON CALAY:** Shannon Calay, Southeast Fisheries Science
23 Center.
24
25 **KEVIN MCCARTHY:** Kevin McCarthy, Southeast Fisheries Science
26 Center.
27
28 **WALTER KEITHLY:** Walter Keithly, SSC member.
29
30 **GRACIELA GARCIA-MOLINER:** Graciela Garcia-Moliner, council
31 staff.
32
33 **YASMIN SANCHEZ:** Yasmin Sanchez, Pew Charitable Trusts.
34
35 **KEN STUMP:** Ken Stump, the Ocean Foundation.
36
37 **IRIS OLIVERAS:** Iris Oliveras, council staff.
38
39 **RICHARD APPELDOORN:** Who is up to give the next presentation on
40 the next item? Where is Bill? There he is.
41
42 **BILL ARNOLD:** Bill Arnold, Southeast Regional Office.
43
44 **RICHARD APPELDOORN:** You're right on time. Bill, the next item
45 is Next Steps in Developing Island-Based Draft Actions and
46 Alternatives, Action 3. You're up.
47
48 **NEXT STEPS IN DEVELOPING ISLAND-BASED FMPs**

ACTION 3

1
2
3 **BILL ARNOLD:** We pretty much covered most of this.

4
5 **RICHARD APPELDOORN:** Why don't you review it for us?

6
7 **BILL ARNOLD:** Sure. As we are required to do, we at the
8 Southeast Regional Office developed actions and alternatives.
9 This is not a fishery management plan requirement, but this is a
10 National Environmental Policy Act requirement, that you provide
11 alternatives that can be compared and contrasted and allow the
12 council to choose among those alternatives when they are trying
13 to figure out how to solve the problems.

14
15 Ultimately, this is what we're going to have to do and this is
16 why I stressed when you give us alternatives for each of these
17 things -- Really, I think the SSC meetings have gone very well
18 and the outcomes are going to be very helpful to us in moving
19 these new FMPs forward and in developing alternatives, but I
20 just want to make sure that you guys are thinking, as I
21 constantly remind, that you have to think in terms of
22 alternatives yourselves when you are coming up with these
23 schemes, because just -- I mean the SSC can say to the council
24 this is way we're going to do it, but the Southeast Regional
25 Office still has to find some way to devise alternatives.

26
27 This is very draft and it's just giving everybody, especially
28 the council, a starting point for what Action 3, which is
29 defining reference points for the species that we grouped or
30 didn't group in Action 2 and which we identified as being
31 appropriate for management in Action 1. This is how we will
32 define reference points for those species or complexes and
33 that's important, because to really understand how you're going
34 to define the reference points, there has to be some at least
35 general idea of what those species or species groupings are
36 going to be.

37
38 Now, obviously if we just took our Action 2 second alternative,
39 which is don't put them into groups and just deal with every
40 species individually, then, from a reference point point of
41 view, it's pretty straightforward. You apply whatever data you
42 have for each species and right up through the model on its own
43 and come up with reference points and ultimately an ACL.

44
45 I would assume, maybe riskily, but I would assume that that's
46 not what the outcome is ultimately going to be. Some of these
47 species are probably going to be grouped into complexes, if only
48 because we just don't have the data to treat every one of these

1 species individually, although at the SEDAR meeting, Shannon,
2 Tom said we can do every species.

3
4 **SHANNON CALAY:** Tom is from a region of the world where they are
5 accepting a lot of borrowing from other stocks in other places
6 and that much borrowing might be unacceptable to SEDAR panels or
7 to this group. I can't -- I think it's extremely unlikely we'll
8 have a stock assessment for every species.

9
10 **BILL ARNOLD:** I wouldn't disagree with you, but that's not a
11 SERO decision to be made. That decision has to be made by the
12 council through the SSC.

13
14 **GRACIELA GARCIA-MOLINER:** To what Shannon is saying, we have
15 been through testimony from the fishers at every single meeting
16 that they don't like borrowing from other areas and it's been a
17 constant concern and a constant issue with us regarding that.

18
19 **BILL ARNOLD:** Okay and so what we have proposed so far is three
20 alternatives and right now, the first is do basically exactly
21 what you did in 2010 and 2011 in the Caribbean ACL Amendments,
22 exactly what you did before. If you remember, that is identify
23 the year sequence you want to use, as we discussed yesterday,
24 and then you build from that and that sets your MSY proxy and
25 you walk through that to your OFL and ABC and ultimately your
26 ACL.

27
28 That was for almost every species, but not for parrotfish in St.
29 Croix and not for queen conch, where you establish set ABCs
30 without going through that process, 50,000 pounds for St. Croix
31 queen conch and 300,000 pounds for St. Croix parrotfish.
32 Anyway, that would be Alternative 1 and it is certainly viable.
33 We have done it all these years up until now, but there is a lot
34 of variability in that.

35
36 For example, you used ORCS for some and Puerto Rico 2011
37 species, you used different year sequences. Sometimes we used
38 the median and sometimes we used the mean and sometimes we used
39 three times the recreational landings. If that's what the SSC
40 and the council wants to do and the Science Center, that's fine,
41 but, if not, there are other alternatives.

42
43 What we're looking at on the screen is the Puerto Rico FMP as an
44 example. There are two other FMPs out there, obviously, that we
45 are developing, one for St. Croix and one for combined St.
46 Thomas/St. John. As I continue to emphasize, they don't have to
47 be the same. That's the whole point of this, is to treat each
48 island group in the manner that best suits that island group,

1 from whatever perspective you guys want to consider, culture,
2 landings, ecology, a combination, whatever.

3
4 Alternative 2 is to use the longest year sequence of reliable
5 landings. Like I said, these are just guideposts, because it's
6 not up to Maria and I to really determine how you guys want to
7 do this, but we're just emphasizing that we have to come
8 up with alternatives and so we used, sort of, the longest year
9 sequence for Puerto Rico for the 2011 species, starting with
10 1988, but the data actually went back to 1984.

11
12 1984 through 1987 were dropped because we did not have the
13 personal information from Daniel Matos on how the landings data
14 were obtained and Daniel started in 1988, I think, but we took
15 it up to the most recent year we had, which at that time I think
16 was 2009 and so you can do that.

17
18 Then there's Alternative 3, and this is just for the year
19 sequences, which is to use the most recent three years of
20 available data and now, that may be -- Here is a perfect example
21 of Alternative 2 and it may be what you want to do for Puerto
22 Rico and Alternative 3 may be what you want to do for the USVI,
23 because that's when they started going to a more species-
24 oriented reporting scheme, instead of just snappers, groupers,
25 and parrotfish.

26
27 Following the 2011 amendment, really, this first step is just to
28 identify those year sequences, which is kind of something you
29 need to do regardless, Shannon, because I think if you're
30 populating any of these models that you have to determine what
31 landings data you're going to use and there are a lot of
32 choices.

33
34 **SHANNON CALAY:** The data-limited approaches all use the entire
35 historical series, everything that is available to us, and it's
36 total removals. It's all sectors and if we have discards, we
37 put them in there too, dead discards. We don't select the
38 number of years for those approaches. We develop historical
39 series.

40
41 **BILL ARNOLD:** So this whole aspect of this could be species,
42 depending upon the choice made, but it still may be important if
43 the council chooses a different preferred alternative that has a
44 different approach.

45
46 **GRACIELA GARCIA-MOLINER:** Can I ask you something about the
47 historical dataset? The historical data that we're using is the
48 reported landings?

1
2 **SHANNON CALAY:** It is not the reported. It was with the
3 expansion factors.
4
5 **GRACIELA GARCIA-MOLINER:** From the beginning of time and
6 whatever the --
7
8 **SHANNON CALAY:** Whatever we had available.
9
10 **KEVIN MCCARTHY:** Yes.
11
12 **SHANNON CALAY:** From the first date of the data availability
13 and so obviously there were probably fisheries operating before
14 our datasets.
15
16 **KEVIN MCCARTHY:** Right. We've got data for Puerto Rico back to
17 1983 and from 1983 forward, regardless of the way those
18 expansion factors were calculated, and I think there have been a
19 couple of different methods, we've got -- Whatever the expanded
20 landings were, that what's we used.
21
22 **BILL ARNOLD:** There is no specific obligation to use expanded
23 landings though?
24
25 **SHANNON CALAY:** It would have to be total removals. You would
26 have to use expanded landings, because the model is assuming
27 that what you're putting in there is total removals and so
28 obviously you can't just put in the reported catches from Puerto
29 Rico.
30
31 **KEVIN MCCARTHY:** Right and so from 2000 forward, we combined the
32 recreational and the commercial and that's total removals and,
33 like Shannon said, and also for the recreational data, from the
34 MRFSS data, we get discards, an estimate of discards. We don't
35 have an estimate of discards from the commercial fishery and so
36 we've got commercial and recreational plus recreational
37 discards. Then we will apply some presumed discard mortality to
38 those discards for that and that's total removals, as much of
39 them as we can account for.
40
41 **GRACIELA GARCIA-MOLINER:** So the only thing that we're really
42 missing is the total dead removals from the recreational sector
43 prior to 2000.
44
45 **KEVIN MCCARTHY:** And discards from the commercial fishery, which
46 I don't have any good plan for estimating that.
47
48 **RICHARD APPELDOORN:** Do our alternatives have to be -- I mean

1 this seems -- We're being very specific here about the time
2 series being used, but we're not being very specific about how
3 that data is being used.

4
5 **BILL ARNOLD:** There is a second component of this, Richard, that
6 we haven't gotten to yet. Let me put this up there first.

7
8 **GRACIELA GARCIA-MOLINER:** But wait. This is basically what we
9 did the last time. It's rehashing it and stating that there is
10 a longer time series and there is a shorter time series.

11
12 **BILL ARNOLD:** Right. This is a strawman. That was the first
13 thing I said, pretty much.

14
15 **RICHARD APPELDOORN:** Yes, I understand that and I'm asking if
16 it's an appropriate strawman, in the sense that is it looking
17 for that specificity as saying Alternative 1 is we're going to
18 use a series of years of data to approximate some ABC without
19 having to specify what that is, because when we talked yesterday
20 about tier levels, how we're actually handling each species gets
21 determined by where it is in the tier for any given year.

22
23 Are we talking about Alternative 1 would be we're just going to
24 use a landings history and Alternative 2 is going to result in a
25 tier system and Alternative 3 is I don't know what, or are we
26 really looking to have something specific?

27
28 Because what happens when you get the alternatives where you're
29 looking at some species are going to be handled this way and
30 some species are going to be handled that way? Is it -- Well,
31 the models need to run the whole time series, but the catch
32 level, just using catch history, does not.

33
34 **KEN STUMP:** A clarifying question. Isn't it true that you need
35 an Action 3b now, based on yesterday's discussion, that if you
36 want to incorporate those newly-assessed stocks that you need an
37 action that would be 3b that says for stocks that have been
38 assessed and deemed appropriate to be used, you will use that
39 method for those and presumably you would have to set up an ABC
40 control rule as part of this action.

41
42 **BILL ARNOLD:** We are going to get to that. I wanted to get
43 through 3a first.

44
45 **RICHARD APPELDOORN:** Well, is it possible to separate a from b?

46
47 **BILL ARNOLD:** They are separated. You can get rid of a. Let me
48 show you a little bit more on this. The first question is, is

1 it absolute that you use every year of data you have available
2 to you or does the SSC have the authority to say no, our
3 guidance is that we want to use, for example -- Since we don't
4 have recreational data before 2000 and since the models require
5 that you combine all available data, do you say we start in
6 Puerto Rico in the year 2000, when we have a complete dataset?

7
8 **TODD GEDAMKE:** I am just missing the context here. In the
9 context of using average landings, I get it. If we're talking
10 about something else, I don't really understand. It sounds like
11 you're trying to put an action in place to manage what an
12 assessment uses as data.

13
14 **SHANNON CALAY:** That is absolutely -- You would not use the same
15 years in a stock assessment. That would be completely
16 inappropriate. You would have to use all of the information
17 available to you in a stock assessment, because you are trying
18 to create a catch series which will determine, ultimately, where
19 the model predicts your stock status is and what yields you can
20 expect.

21
22 I am concerned a bit about this amendment and if I were
23 participating on this particular IPT team, I would have
24 expressed this to you, but I haven't --

25
26 **BILL ARNOLD:** This is not an amendment. This is a new FMP.

27
28 **SHANNON CALAY:** I am concerned about this FMP then, because when
29 we went through initially and created the years, when we
30 developed those ranges of years for the stocks, the idea was we
31 were looking for a period of time we felt reflected something in
32 equilibrium that might have -- Likely possibly could be used as
33 an MSY proxy, right? Some period of time when we thought that
34 the fisheries were operating in an equilibrium condition which
35 might reflect that they were not overfishing.

36
37 There was a lot of thought process that went into that and if
38 you just try to use the same period for every stock, you may be
39 violating those assumptions, first of all. You may not be
40 choosing a period of time when you think the stock was stable
41 and especially if you just use the most recent years.

42
43 That is very dangerous, because perhaps in the most recent years
44 the fishery was -- Perhaps they were overexploiting the stock
45 and perhaps, due to an economic concern, they were not fishing -
46 - They were fishing at a very low level. It doesn't tell you
47 anything about whether that level of catch was sustainable.

1 **BILL ARNOLD:** I want you guys to understand that I am not
2 pushing any of this. I am just getting it out there for
3 discussion, so you guys can give us this exact kind of guidance,
4 so that we can refine these actions and alternatives.

5
6 **RICHARD APPELDOORN:** So I mean --

7
8 **BILL ARNOLD:** Richard, let me say this real quick. When we go
9 to Action 3b, Action 3b does not have to be predisposed towards
10 data-limited modeling as the only means of establishing
11 reference points and ACLs. That's what the 3b alternatives are
12 all about. Do you use these outcomes?

13
14 Shannon, you have told me they may not work and so there has to
15 be another alternative, at least one other alternative, to fall
16 back on. Now, when the SSC provided the fundamental guidance on
17 how we establish ACLs in the 2010 and 2011 amendments, they
18 defined an approach that apparently was a legitimate approach,
19 the one you just described, because we used it. We have been
20 operating under it and so it could be, in my mind, a little
21 risky to then turn around and say that's not an appropriate
22 approach and we should not include it as an alternative way of
23 determining what our ACLs should be.

24
25 **GRACIELA GARCIA-MOLINER:** That is going to be included anyhow,
26 because that is the no action alternative and we have to have
27 that one and so the no action falls back into what we did and
28 what's here.

29
30 **BILL ARNOLD:** But this doesn't have to be the no action
31 alternative.

32
33 **GRACIELA GARCIA-MOLINER:** That's true, because we are changing
34 to the island-based, but we are still having the species
35 information and so at some point we have to deal with this is
36 the way things were done before and they might not be -- Here it
37 would turn into a considered and rejected, probably, alternative
38 and so it would have to be documented, because we have used it
39 and even if it was for the whole of the U.S. Caribbean, but it
40 was still used for each island separately, quote, unquote, and
41 so we have to turn that into a no action and this is considered
42 and rejected, if that's what is going to happen, but it has to
43 be here, because this is the way that we have done business
44 before.

45
46 **RICHARD APPELDOORN:** (The comment is not audible on the
47 recording.)

48

1 **GRACIELA GARCIA-MOLINER:** Exactly.
2
3 **BILL ARNOLD:** No, you don't, Richard, and that's exactly right.
4
5 **GRACIELA GARCIA-MOLINER:** But that's a place to start. You can
6 say we're not even going to consider that at all.
7
8 **RICHARD APPELDOORN:** Go back to the first one, so I can put
9 something in context. When we're talking about Action 3a and
10 Action 3b, does this mean we're -- We, the council, is going to
11 choose an alternative, 1, 2, or 3, for Action 3a and then we
12 will choose an alternative, 1, 2, or 3, for --
13
14 **GRACIELA GARCIA-MOLINER:** Yes.
15
16 **BILL ARNOLD:** But it doesn't have to be the same alternative
17 within each FMP.
18
19 **RICHARD APPELDOORN:** No, I understand that, but do we even need
20 or want an Action 3a? If that's going to be driven by the
21 assessment method used, then we shouldn't really even be talking
22 about what the year sequence is.
23
24 **BILL ARNOLD:** Before you make that decision, let's talk about
25 3b. We talked about Alternative 1, the no action alternative.
26 There is no deciding on year sequences and there is no deciding
27 on methods. You do exactly what you did before with the same
28 year sequences and everything, assuming that that same 1999 to
29 2005 period in St. Croix for snappers remains the legitimate --
30
31 **RICHARD APPELDOORN:** We understand what no action means and so
32 let's move on.
33
34 **BILL ARNOLD:** You guys say that and then you come back with
35 question, but in Alternative 2, you establish the maximum
36 sustainable yield using the year sequence defined in 3a and this
37 has nothing to do with the SEDAR-46 outcomes or the toolbox or
38 anything. This is an alternative that does not take that
39 approach.
40
41 Instead, you take some extraction hybrid or maybe something
42 totally different from the previous way of doing things, but it
43 could be just one thing.
44
45 You could use only median landings or you could use only mean
46 landings or you don't use ORCS or you do use ORCS. All of these
47 things aren't written in here, but that is all the different
48 combinations that could be drawn from for Alternative 2, but you

1 still have to establish the year sequence of data you're going
2 to use to make those determinations.

3
4 Then Alternative 3 -- Anyway, that's what we are going through
5 and exactly what is in these alternatives is not as important as
6 that we establish alternatives that allow us to consider all
7 viable approaches to getting this done and you have to remember
8 that, all viable approaches to getting this done.

9
10 What you guys did in 2010 and 2011, almost by definition, was a
11 viable approach to getting this done and so it should be
12 included at least as a viable alternative and that's the whole
13 NEPA demand, is that you cover the spectrum of viable
14 alternatives. You don't just get to pick we want to do this and
15 that's the way it's going to be. The alternatives require that
16 you cover from one end to the other, as best you can, the viable
17 alternatives.

18
19 Ultimately, one of these alternatives would be to use -- However
20 you want to word it, but use the toolbox to conduct the
21 assessments and that's how you determine the reference points
22 and the ACL. That's really the gist of this.

23
24 The details aren't important, because Maria and I are writing
25 this up based upon limited knowledge of where the SSC wants to
26 go and so what we need is guidance from the SSC and the council
27 as to what alternatives they want in Action 3a. 3b, which could
28 -- If you don't want 3a, but you can see now from my argument
29 why 3a needs to be in there, then okay, but you've still got to
30 come up with alternative approaches.

31
32 **GRACIELA GARCIA-MOLINER:** Okay and so Action 3 is really to set
33 the reference points for whatever groupings that we are going to
34 decide we have from Action 2. All this is doing right now is
35 setting the stage from the way we used to do it and so that's
36 the -- There is no difference between this and the other except
37 that we have included things that we have rejected before, like
38 the shortest and the longest time series, et cetera.

39
40 This is just copy and paste of what we have done before. Now,
41 because there are going to be dramatic changes and because we
42 are considering the data-poor assessments, then this will just
43 kind of collapse into one alternative, basically, and this is
44 the way we used to do things and the Alternative 2 would be we
45 are going to use this number of models from the toolbox and this
46 is how we are going to set the reference points. Alternative 3
47 is if someone comes up with a different way of doing things,
48 then that would be included.

1
2 **BILL ARNOLD:** What we did, Graciela, is extract the various
3 components of the Alternative 1 approach and meld them into a
4 single consistent approach within an island. That is a viable
5 alternative.

6
7 **JORGE GARCIA-SAIS:** And more species, right, because I think
8 Shannon's point was that there is no way of determining a year
9 framework from which to treat each species or -- An approach
10 that perhaps different periods can be used for different species
11 or species groups and not necessarily for determining one set of
12 years for each island, but rather choosing a specific period of
13 observations for each species or species group, depending on the
14 applicability of the data.

15
16 **GRACIELA GARCIA-MOLINER:** With 3a and 3b, we will collapse them
17 into one alternative, because it would be one way of doing
18 things. Alternative 2 will be then just the toolkit to decide
19 what the reference points are going to be for the groupings or
20 the species, et cetera. Alternative 3 can be another way of
21 obtaining the reference points for Species A, B, C, and D that
22 don't fit into Alternative 2.

23
24 This that Bill is trying to present is just basically what we
25 have done before, because this was the only thing that was
26 available to the council at the time.

27
28 **SHANNON CALAY:** I think I would recommend creating a flexible
29 approach that if there is a time that stock assessment
30 information is available that you are able to use it if you
31 choose to and I am talking about really the SSC making that
32 determination that that information is useful.

33
34 **BILL ARNOLD:** Shannon, that's tough. Here is what is difficult
35 about it. Within the context of the legalities of management,
36 when you shift over, and we can speak with GC about this, but
37 when you shift over to a new way of doing things, it's going to
38 be tough to have that automatically.

39
40 **SHANNON CALAY:** But the South Atlantic Council and the Gulf
41 Council already have this flexibility. They already have a
42 tiered control rule that they operate under that they are able
43 to use stock assessment advice, ORCS, or recent landings history
44 alone.

45
46 If we are going to box ourselves in to this, to letting the
47 council decide if we're going to use recent landings history
48 alone, right off the bat, so we have no flexibility in the stock

1 assessment, then there is absolutely no point in ever conducting
2 a stock assessment in the Caribbean. I mean seriously. Why
3 would you -- I don't understand how that can -- That doesn't
4 seem consistent with the Congress directive to manage fisheries.

5
6 **RICHARD APPELDOORN:** Can you use language to recommend --

7
8 **SHANNON CALAY:** I am not --

9
10 **RICHARD APPELDOORN:** Ken, are you familiar with the language in
11 either the Gulf or the South Atlantic?

12
13 **KEN STUMP:** I am looking at the ACL amendment for the South
14 Atlantic right now and they --

15
16 **RICHARD APPELDOORN:** Can you --

17
18 **KEN STUMP:** Their alternatives are at a higher level of
19 generality and so you talk about deciding about what species
20 you're going to have in or out and then establishing an ABC
21 control rule and then establishing ACLs and optimum yield. Then
22 they have subalternatives within each of those alternatives.
23 This approach, to me, is very confusing.

24
25 **RICHARD APPELDOORN:** Theirs or this?

26
27 **KEN STUMP:** The one we're looking at.

28
29 **RICHARD APPELDOORN:** Can you send what you're looking at to
30 Graciela, so she can put it on the screen?

31
32 **SHANNON CALAY:** There is also a difference between ABC and ACL
33 and the difference is that the SSC determines how you are going
34 to reduce from OFL divided by recent landings history or a stock
35 assessment ABC, as reduced, but then the council does have
36 prerogative on how they're going to create ACL, as long as it --

37
38 **BILL ARNOLD:** That was included in that action, but we --

39
40 **SHANNON CALAY:** The way you're writing it with MSY proxy equals
41 the council selected year stuff indicates to me that you're
42 asking the council to select the MSY proxy, which doesn't seem
43 like the right language to me. The council doesn't select the
44 MSY proxy, in my mind. Now, maybe you do need to talk to
45 General Counsel, because I could be incorrect.

46
47 **BILL ARNOLD:** Well, only in the sense that that's exactly how it
48 was done for the 2010 and 2011 species.

1
2 **GRACIELA GARCIA-MOLINER:** Exactly.
3
4 **SHANNON CALAY:** That was how it was done, but it was done that
5 way because we had no other information available and there is
6 no reason why we have to call it the MSY proxy. You could say -
7 -
8
9 **RICHARD APPELDOORN:** Please don't, because it's not.
10
11 **SHANNON CALAY:** It is not really an MSY proxy. I mean you could
12 just call it ACL is going to be set this way, without specifying
13 --
14
15 **RICHARD APPELDOORN:** Or ABC.
16
17 **SHANNON CALAY:** If that's what the SSC has decided, then ABC
18 could be set that way and ACL could be set equal to ABC or with
19 a buffer, however the council chooses.
20
21 **RICHARD APPELDOORN:** Likewise, if we're going to look at catch
22 history, we're not getting anything as an overfishing level or
23 that's a proxy for MSY and it's someplace where we're just
24 drawing the line in the sand and so the ABC comes out of that.
25
26 **SHANNON CALAY:** Particularly if we're going to start asking the
27 council for alternative years selected. It becomes very far
28 away from an MSY proxy at that point. It's not the same concept
29 at all. It's just a reference set of years.
30
31 I mean I would be very happy to assist you in trying to create
32 something that is consistent with what the Gulf Council and the
33 South Atlantic Council are doing, which still maintains the
34 flexibility you want to be able to do business as usual. I am
35 not trying to be an impediment.
36
37 **BILL ARNOLD:** No and that's why we're discussing this.
38
39 **SHANNON CALAY:** Right and so I am not -- I have never written an
40 FMP myself, but I would be happy to assist.
41
42 **BILL ARNOLD:** Well, we don't need -- I mean we wouldn't drag you
43 down the development of this entire FMP. We would just would
44 need help really from you with Action 3.
45
46 **KEN STUMP:** If you go to page 27 of that ACL amendment document,
47 Action 3 establishes acceptable biological catch and it shows
48 the alternatives. Alternative 1 is the no action and

1 Alternative 2 and 3 and 4 and 5 is their preferred.

2
3 You know this SSC spent two years on this. I don't know that
4 you really need to spend that much time on it and a simple
5 system and you just need to establish the -- Basically at least
6 start with two tiers.

7
8 **BILL ARNOLD:** All right and so looking at that, I don't see that
9 there's a lot of difference. Here, you've got an Alternative 3
10 for unassessed species and you would probably do that the old
11 way and you've got an Alternative 4 for assessed species and you
12 use the assessment outcomes. That is basically what I was
13 laying out there.

14
15 **GRACIELA GARCIA-MOLINER:** This is exactly what we did before. I
16 mean this is the way that it was set up before and I think
17 that's what the ABC control rule was that the SSC set up.

18
19 **BILL ARNOLD:** If you're going to do Alternative 3 for unassessed
20 species, you don't have to lay it out the way I've laid it out,
21 but somehow you have to define, and they've got it in there,
22 that 1999 to 2008 is the landing sequence you want to use.

23
24 They are using medians. They are spelling out medians and these
25 are exactly the things I'm asking for from you guys. You have
26 used means and medians and you have used multiple year sequences
27 and you have used various reductions from OFL to ABC and mostly
28 zeroes and now all of the reductions were from ABC to ACL, the
29 council's prerogative, but this is exactly what I am talking
30 about. This is the guidance we need from you guys.

31
32 We can structure it this way, but, like I said, this is
33 essentially the way we have Alternative 3d structured and so
34 this is not some new revelation. This is what we're doing.
35 This is what we're asking for.

36
37 **SHANNON CALAY:** There is a difference, though. The difference
38 is that like Alternative 3, for example, which is the closest to
39 what you're trying to do, the year range is the same here for
40 every one. It is the year range that SSC decided was their --

41
42 **BILL ARNOLD:** That's correct.

43
44 **SHANNON CALAY:** Right and all of these are reductions from that
45 and none of them give the council any prerogative to exceed it
46 and so that is the reference level they chose and they are
47 saying you can't go any higher than 95 percent of that level.
48 You can go lower. They are not asking the council to select

1 that range of years based on whatever motivates the councils.

2
3 **BILL ARNOLD:** So you would get rid of Action 3a. It's simple
4 and we would just hit "delete" and we would embed those year
5 sequences -- Which you need to give us guidance on what you want
6 that year sequence to be. If you want it to be every bit of
7 data we have in Puerto Rico commercial --

8
9 **SHANNON CALAY:** I didn't say -- Don't confuse what we do in the
10 stock assessment with what you need to do for the reference
11 years. It's a different concept and I do agree with you that
12 what you have in place is very cumbersome and became kind of ad
13 hoc as time went by and so there may be a need to review it and
14 simplify it.

15
16 I am just suggesting that the SSC make those determinations and
17 don't leave it in the hands of a council and call it an MSY
18 proxy, because at that point it's just a range of years the
19 council likes for some reason and it has nothing to do with MSY.

20
21 **BILL ARNOLD:** So my presentation of Alternative 3a and 3b is not
22 where I hope you guys go. It's where we came from. We are
23 using that as a starting point so you guys can say exactly what
24 you're saying and that's not the way we're going to do it and
25 then you're going to tell us how we are going to do it and we're
26 going to --

27
28 What I want to take to the council next week is not what we used
29 to do, but some guidance on how you would like to do it so we
30 can write it up and take it to them next week, in that format.

31
32 **RICHARD APPELDOORN:** You're not going to get this next week.

33
34 **GRACIELA GARCIA-MOLINER:** No, this is not going to -- I mean
35 this is going to be the beginning, because you can't even go
36 back to the SSC. The SSC actually considered, at a meeting in
37 Miami, looking at the complete time series that we had for
38 everything when we started developing this.

39
40 **BILL ARNOLD:** Okay and so next week, I am not going to present
41 Alternative 3a. I am not going to talk about year sequences,
42 because you just told me not to do that. That's great.

43
44 **GRACIELA GARCIA-MOLINER:** So we have to tell them that the SSC
45 is going to be working on the ABC control rule.

46
47 **RICHARD APPELDOORN:** So just a point of what they're doing here.
48 They have to pick an alternative. If they say, okay, we pick

1 Alternative 3 for unassessed species, does that mean they can't
2 assess species, because how can they take both Alternative 3 and
3 4?

4
5 **BILL ARNOLD:** They can select multiple alternatives as their
6 preferred alternatives. They are not restricted to a single
7 alternative. We have done that on many occasions.

8
9 **KEN STUMP:** If you look at their preferred alternative, it is
10 the control rule that gives them the flexibility they need to
11 address all the different stock situations that they have.

12
13 **BILL ARNOLD:** Right and that's the council's preferred
14 alternative. That doesn't have to be the Caribbean Council's
15 preferred alternative. That is the South Atlantic's preferred
16 alternative.

17
18 **KEN STUMP:** But an ABC control rule is required and that's part
19 of the NS-1 guidance on that. That's a requirement.

20
21 **BILL ARNOLD:** We called it an ABC control rule, Ken. We have an
22 ABC control rule. Shannon, what's not clear to me in this is
23 that transitioning from unassessed to assessed and how that is
24 handled. That's when I think things get tricky and so we put in
25 -- Like white grunt, where we put the white grunt, it's an
26 unassessed species and until we get an assessment --

27
28 **SHANNON CALAY:** I will show you how that happens. This is the
29 Gulf's tiered control rule and so Tier 1 is a quantitative
30 assessment is available and it provides you with estimates of
31 MSY and/or its proxy and so that could be a data-limited
32 approach. In the Gulf Council, we have actual data-rich stock
33 assessments and so that was the intention of Tier 1. Then you
34 use the OFL as the yield resulting from applying FMSY or its
35 proxy to estimated biomass.

36
37 Then you go to the next tier and Tier 2 was an assessment
38 exists, but it doesn't provide an estimate of MSY or its proxy
39 and so then we had another methodology here in that situation.
40 Then Tier 3a -- These are the two where there is no stock
41 assessment and we're using recent landings history and so, in
42 this case, the Gulf basically says the condition for use is that
43 no assessment is available, but landing data exists. They set
44 the OFL equal to the mean of recent landings plus two standard
45 deviations and then if -- Then ABC is specified here at one-and-
46 a-half standard deviations, blah, blah, blah. I am not going to
47 read it all.

48

1 Tier 3b is no assessment and landings data exist and, based on
2 expert evaluation, you feel the stock is either overfished or
3 likely to be experiencing overfishing and then this one is more
4 conservative.

5
6 The one above is specified for use if you don't believe the
7 stock is overfished and it actually allows the fishery to
8 increase its effort, because the SSC, in its evaluation of that
9 stock, says it's unlikely to be overfished and unlikely to be
10 undergoing overfishing and so you actually let ACL be above the
11 recent landings. In this situation, where you think it might be
12 overfished or experiencing overfishing, there are reductions.

13
14 **BILL ARNOLD:** Shannon, I understand all of this, and this may
15 not be exactly on course, but we have got to -- I think we at
16 the Southeast Regional Office have to consider the long-term
17 implications of this. I still say this is static. On this day,
18 you say here is where we are with this species and here is where
19 we are with this species and you apply the appropriate method.

20
21 The question is what happens when unassessed species become
22 assessed and I would argue that nothing automatic happens, from
23 our point of view. We then have to prepare an amendment, a
24 regulatory amendment or something, that says --

25
26 **SHANNON CALAY:** The council asks to --

27
28 **TODD GEDAMKE:** I mean just make it happen. No assessment is
29 available and now you have an assessment and put whatever legal
30 language, whatever you've got to do, in there to make it happen.
31 If you suddenly get an assessment and you have better
32 information, there has to be a way of doing it. I don't know
33 what the legal answer is.

34
35 **BILL ARNOLD:** I am explaining to you what the method is. It is
36 to amend the FMP to change --

37
38 **GRACIELA GARCIA-MOLINER:** You can establish a framework approach
39 that says if you move from Tier 3a to Tier 2 that you do this
40 and your ABC becomes that and so it's --

41
42 **JOHN HOENIG:** Why do you need an amendment to do that?

43
44 **BILL ARNOLD:** We prepare and submit a framework amendment that
45 takes nine to twelve months to get through.

46
47 **TODD GEDAMKE:** But a framework adjustment -- You're telling me
48 that you put something in place and suddenly someone has an

1 assessment and I mean across the country when something changes,
2 you have to wait two years to respond?

3
4 **GRACIELA GARCIA-MOLINER:** No, a framework approach, we have done
5 this before and it doesn't take -- You are not circumventing the
6 process. What you're doing is that you are saying you already
7 have it in your regulation that if you go from Tier 3a to Tier 2
8 that you do this. You can change your ACL by this framework and
9 we actually have it in the ACL Amendment.

10
11 **RICHARD APPELDOORN:** So I mean this has already been passed.

12
13 **GRACIELA GARCIA-MOLINER:** This has what?

14
15 **RICHARD APPELDOORN:** I mean the legalities of this are already
16 there and it's been passed.

17
18 **SHANNON CALAY:** We've been using this for years.

19
20 **RICHARD APPELDOORN:** Right and have you had a situation where a
21 species has gone from one tier to another tier?

22
23 **SHANNON CALAY:** Absolutely.

24
25 **RICHARD APPELDOORN:** And there has been no problems?

26
27 **SHANNON CALAY:** No, there's been no problem. I mean it has
28 sometimes caused consternation if we had an assessment and we
29 were using it and then suddenly we decided we don't like it and
30 the results are not useful for management anymore, because then
31 it drops down to a lower tier.

32
33 **RICHARD APPELDOORN:** Quality of data changes sometimes --

34
35 **SHANNON CALAY:** It is functional and the process is that your
36 Caribbean Council serves on the SEDAR Steering Committee. If
37 they want to request an assessment for a stock or a set of
38 stocks, they go through the SEDAR Steering Committee to
39 negotiate and the Science Center produces that for you, because
40 you are our client, essentially.

41
42 We are asked and we don't make stock assessments in a -- We
43 don't decide that one day I am going to do a stock assessment of
44 this. You guys ask for it and we do it and we present the
45 information and you go through this tier control rule and decide
46 how you're going to use the information.

47
48 **BILL ARNOLD:** Then we would prepare and submit an amendment to

1 make that change.

2
3 **SHANNON CALAY:** I don't think you have to -- I don't think
4 you're required to --

5
6 **KEN STUMP:** The only thing is if you are changing any of your
7 reference points, your ABCs and ACLs. Then you need like a
8 framework amendment, but to move a stock from Tier 3 to Tier 2,
9 that's a scientific decision that does not require an amendment.
10 The only reason you would have a framework amendment is because
11 it would change your reference points.

12
13 **BILL ARNOLD:** You don't think that that switch from one tier to
14 another is going to change those reference points?

15
16 **KEN STUMP:** I know it doesn't, because it's done routinely in
17 councils where they don't -- That's a scientific decision that
18 is outside of the amendment process. It's only because it
19 changes your reference points that you end up having what you're
20 calling a framework amendment would be called just a simple
21 specification process on a regular sort of biennial basis in
22 another council. It's a routine thing.

23
24 **GRACIELA GARCIA-MOLINER:** So one thing that you might want to do
25 to get this moving is to actually get this in Word or something
26 like that and then fix it up so that it might be reflective of
27 the Caribbean, because this is the Gulf to the South Atlantic
28 and it's originally the Gulf's way of doing business, right?

29
30 **BILL ARNOLD:** This is great guidance and you guys have been
31 extremely helpful and now we know that here's the alternatives
32 we want to get in there, some or all of these, and I can work
33 with Shannon on this to make sure that they work within the
34 context of the constraints on the models and we can develop the
35 draft, revised draft. It won't be taken to the council next
36 week, but we can --

37
38 **TODD GEDAMKE:** You've got to get the constraints of the models
39 out of there.

40
41 **BILL ARNOLD:** I am talking about these percentages that were
42 just up there about the likelihood of overfishing or what
43 Shannon talked about about the likelihood of exceeding or -- The
44 risk of exceeding OFL is 45, 35, 25, and 15. Your risk of
45 exceeding the BMSY and the other risk of overfished or
46 overfishing, all those things that are legally mandated. They
47 can't exceed the level, but they can be below that level and
48 things like that.

1
2 This is great and, like I said, you've given me the guidance I
3 need and the authority, by saying make it happen -- What did you
4 say, make it happen and get it done?
5
6 **TODD GEDAMKE:** On the record, no authority. I was clear with
7 that statement.
8
9 **SHANNON CALAY:** The SSC took about two years to put this
10 together and they basically established an ABC control rule
11 working group and I was on the Gulf SSC and we had Science
12 Center participants as well, but it's not something you knock
13 out like tonight to show the council.
14
15 **BILL ARNOLD:** I just said that. We're not going to bring this
16 to the council.
17
18 **RICHARD APPELDOORN:** I mean just to get to where we are now,
19 we've had a gazillion meetings with this SSC and larger working
20 groups to do that.
21
22 **BILL ARNOLD:** But we have the opportunity to learn from that and
23 build on it and not reinvent the wheel.
24
25 **SHANNON CALAY:** We will make sure that we write something that
26 is consistent with the approach that you have used and also
27 allows the flexibility to use stock assessments.
28
29 **BILL ARNOLD:** Yes and this is a good source of guidance for
30 doing it.
31
32 **RICHARD APPELDOORN:** So how many tiers did they have?
33
34 **SHANNON CALAY:** In this one, they had three. They later
35 modified this and it's kind of confusing, because Tier 2, the
36 way it's written here, was actually never useful for anything.
37 It was never used and never useful.
38
39 **RICHARD APPELDOORN:** What was Tier 2?
40
41 **SHANNON CALAY:** Tier 2 was for -- It was an attempt to allow
42 some data-limited approaches, but the way it was written was not
43 a useful way to use data-limited approaches and so later they
44 added a tier and that one was actually more useful than this
45 Tier 2, although that one was not deleted. I think we ended up
46 with four, one of which was useless.
47
48 **RICHARD APPELDOORN:** All right. First off, do we need to make a

1 different distinction between a data-poor assessment and a data-
2 rich assessment or is it just an assessment using the best
3 available models for that species?
4

5 **SHANNON CALAY:** The reason they did that is at the time, there
6 were some --
7

8 **RICHARD APPELDOORN:** I am not asking about -- I am talking about
9 now. Should we be looking at this as saying assessments versus
10 no assessments or should we be --
11

12 **SHANNON CALAY:** I think you should have assessments which
13 produce estimates of OFL or you may have -- You may still have
14 some information from a model that doesn't give you OFL and then
15 what would you do with that? What if you were given something
16 about the recent exploitation rates compared to --
17

18 **RICHARD APPELDOORN:** This is where I was going. Should we be
19 having an assessment that gives an OFL and a second tier that
20 perhaps can track the behavior of the stock and we can know
21 whether we need to increase or decrease ABC and then one that is
22 recent landings history? That's what I would like to see.
23

24 **SHANNON CALAY:** Right and that was kind of the attempt here with
25 Tier 2, but it never really worked and so let me think about how
26 you would use a very flexible tier that might capture some
27 method that informs you about the state of your fisheries, but
28 doesn't specifically give you OFL.
29

30 **RICHARD APPELDOORN:** Yes and so I am going back to Todd and the
31 conversations we've had, starting at the National SSC, about
32 trying to get the possible indicators being used.
33

34 **BILL ARNOLD:** What was Tier 2, Richard, just in general what you
35 said?
36

37 **RICHARD APPELDOORN:** I am not sure what I'm talking about and so
38 I might defer to somebody like Todd, but it's the data can be
39 informative to track the status of the resource without
40 necessarily giving an OFL level, yet still providing useful
41 information that could be used to provide an ABC.
42

43 **TODD GEDAMKE:** I think the language is going to get extremely
44 tricky and I think it's just going to be some side conversations
45 and with the background work you're talking about. What we're
46 discussing here is actually finding some way of allowing science
47 to perform management without locking the door on an existing
48 box.

1
2 We're now talking about taking a slightly different way of
3 informing through science and that is being at least talked
4 about by the national SSC level, in terms of this. The language
5 in there, in terms of legality, is going to have to be thought
6 about very carefully.

7
8 **RICHARD APPELDOORN:** My question is, is it something we should
9 be shooting for, given all the caveats you're talking about?

10
11 **TODD GEDAMKE:** I think the amount of time that this is going to
12 take to get from here to there, I think absolutely and I don't
13 know how vague we can be on Tier 12. I don't know how vague you
14 can be in your goals between here and there at this point or how
15 specific you can be.

16
17 We don't know exactly what we're talking about in terms of how
18 that would work. Conceptually, in terms of providing enough
19 language and having GC take a look at it and making sure that
20 it's something that will fly, I think that's going to take some
21 development. Yes, I think it's something ideally we shoot for
22 and allow the flexibility to go to that level and I also think
23 it's going to take a little bit of work.

24
25 **RICHARD APPELDOORN:** Is that something where we want to be able
26 to have a framework amendment, so if we come up with that, it's
27 easy to stick it in, as opposed to a whole amendment?

28
29 **TODD GEDAMKE:** I have been terse in my response at pieces here
30 and this is one that I would not be terse on, in that I think
31 that this is where it may be challenging, to put language in
32 there in a framework. I am outside of my legal knowledge.

33
34 **KEN STUMP:** Can I respond to that, because I think that the NS-1
35 Guidelines are being revised right now and the proposed rule
36 would be, having the Caribbean in mind, that you could specify
37 an approach that is different than the standard approaches to
38 specifying OFLs and ABCs.

39
40 I think there is recognition that the door should be opened to a
41 lot of this and obviously specify how you do that and it just
42 says to prevent overfishing you must establish ABCs and ACLs and
43 so I think the NS-1 Guidelines are being revised to allow maybe
44 this flexibility that you feel like you didn't have before.

45
46 **TODD GEDAMKE:** That would be a really good starting point. I am
47 not familiar with the new language, but the old language was
48 simply if the SSC feels that you can meet these requirements and

1 alternatives that it may be acceptable, but it was one or two
2 sentences and it was very, very brief. Whatever that language
3 is would be a good starting point for what we're talking about.
4

5 Actually, and I am just thinking and shooting from the hip, but
6 if you have an assessment, it's one. If you don't have an
7 assessment, it's Tier 3 and if you don't have an assessment, but
8 you have expert judgment and the last one could be this
9 alternative approach is developed and followed and use the exact
10 language that's in NS-1 or whatever that is. Do you know what
11 I'm talking about? Grab that sentence and see if it's workable.
12

13 **BILL ARNOLD:** That sentence may be a little different than
14 revised NS-1, assuming that gets through, but yes, I know
15 exactly what you're talking about and whatever that language is
16 --
17

18 **TODD GEDAMKE:** We can just cut and paste and start from there.
19

20 **KEN STUMP:** I think if you find you have the ability to use the
21 fish density data approach as an alternative, I think there's --
22

23 **BILL ARNOLD:** Ken, I can't promise you there is, but that's what
24 they are saying. What they say and then what they're actually
25 willing to let go through can be different. So far, that
26 terminology that Todd is talking about has been resisted to the
27 point of rejection on almost every council, by GC, and
28 Headquarters and the people that own us.
29

30 **RICHARD APPELDOORN:** Right, but not the people who actually have
31 to accept these assessments.
32

33 **BILL ARNOLD:** It has nothing to do with the assessment.
34

35 **TODD GEDAMKE:** I think most of the people that actually sit
36 there and do it have been asking for this since day one.
37

38 **SHANNON CALAY:** Absolutely.
39

40 **TODD GEDAMKE:** Putting in a very clear-cut interpretation of
41 where the tone of that is, I personally have seen this year,
42 since the National SSC meeting and other conversations, that
43 there is more of a potential acceptance for it now than there
44 ever has been. I don't know and so if you look at the track
45 record prior to very recent year or so, very recent --
46

47 **BILL ARNOLD:** Just so you know, I was on that NS-1 group and
48 just as the reason they have -- This is because I argued that we

1 cannot continue to allow these Northeast and Alaska concepts to
2 be applied to the Caribbean.
3
4 **SHANNON CALAY:** Yes, but trust me that it was not just you. It
5 was Jim Berkson and I and the Pacific Islands and Todd. We have
6 for years been having that same dialogue with GC and with the
7 NS-1 working groups.
8
9 **BILL ARNOLD:** We hammered it out in this one.
10
11 **SHANNON CALAY:** They have heard it from many, many sides now.
12
13 **BILL ARNOLD:** Good, but like I said --
14
15 **SHANNON CALAY:** Why there is now suddenly some flexibility, I
16 actually don't know. I mean I don't know what that change was.
17
18 **BILL ARNOLD:** I can't promise there is any flexibility.
19
20 **SHANNON CALAY:** I can't either.
21
22 **BILL ARNOLD:** There is a statement of flexibility.
23
24 **SHANNON CALAY:** Yes.
25
26 **BILL ARNOLD:** We should -- Certainly we would be very remiss if,
27 after all the years of arguing, we didn't include that in our
28 development of these FMPs, after saying this is what we need and
29 now that we supposedly have it, we certainly want to take
30 advantage of that.
31
32 **TODD GEDAMKE:** I strongly support that. I think, all in all, we
33 would be remiss if we didn't take that up.
34
35 **BILL ARNOLD:** The last thing I would ask for, as I did for the
36 Action 2, is a small group from the SSC to bounce this stuff off
37 of. Certainly I want to be able to work with Shannon to develop
38 this and we will develop wording and then I want to be able to
39 show it to somebody, like Todd or whoever you choose, but it
40 seems like Todd would be a good choice, if he has the time and I
41 know he's extremely busy, but just somebody we can show it to
42 and they can say, no, don't word it like this or you've
43 forgotten this or just give us the guidance so we can build this
44 thing up.
45
46 The real goal is to be able to bring this back at the summer
47 council meeting. There, we would like to have fleshed out
48 actions and alternatives and not next week. Next week is just

1 letting the council know overall a very general concept of where
2 we want to go with Actions 2 and 3. When we come back in the
3 spring/summer, we want to be much more serious and much more
4 defined about where we intend to go.

5
6 If it takes longer, it takes longer, but if we don't have
7 goalposts, then we've got nothing to shoot for. That's why I
8 keep putting these time limits in here. Okay?

9
10 **RICHARD APPELDOORN:** I am okay. I mean if you think you have
11 what you need to express to the council next week where we are,
12 based on what we've been talking about here.

13
14 **GRACIELA GARCIA-MOLINER:** But this is a recommendation that you
15 guys are going to make on Action 3.

16
17 **RICHARD APPELDOORN:** Do we want to be a little bit more -- That
18 says we haven't done this yet, but we are looking at obviously
19 the alternatives, but we're looking at a preferred alternative
20 is going to be a tiered type of approach, somewhat along the --

21
22 **BILL ARNOLD:** I would not be mentioning anything about preferred
23 alternatives, definitely. What we can say is here is some of
24 the things we discussed and that's what I would be comfortable
25 in saying.

26
27 **RICHARD APPELDOORN:** Okay.

28
29 **BILL ARNOLD:** You know we discussed -- I don't know how much
30 detail they're going to drag any of us into at the meeting, but
31 I could say there is a tiered approach that is used in the South
32 Atlantic and Gulf and the SSC and the Science Center felt like
33 that's a good starting point for building a tiered approach in
34 the Caribbean that would allow us to account for, and Shannon
35 will be there, allow us to account for assessed stocks,
36 unassessed stocks, the level of data available, et cetera, et
37 cetera.

38
39 **RICHARD APPELDOORN:** Okay. I don't think they can drag too much
40 out of you until Trump becomes President.

41
42 **SHANNON CALAY:** We will probably all be fired.

43
44 **TODD GEDAMKE:** It will all be a moot point.

45
46 **BILL ARNOLD:** When they ask questions, I try to answer them.
47 Just as far as recommendations is concerned, I personally, and
48 this is just my personal desire, is that the working group not

1 be so formal that it doesn't allow the questions and things that
2 I think would be -- But you can set it up any way you want.
3
4 **TODD GEDAMKE:** So do you need a recommendation that you have a
5 designated working group and at the same time make sure that
6 it's not a formal situation?
7
8 **GRACIELA GARCIA-MOLINER:** No, I think that we are just going to
9 use a working group.
10
11 **BILL ARNOLD:** All I want is just somebody to bounce things off
12 of.
13
14 **GRACIELA GARCIA-MOLINER:** It can be emails and that kind of
15 thing, but I think that the council needs to know that this is -
16 -
17
18 **RICHARD APPELDOORN:** Does the formality of a working group then
19 allow you to contact Shannon directly without going through
20 Bonnie?
21
22 **SHANNON CALAY:** That's not a problem, as long as she is -- We
23 need to have a request that I participate.
24
25 **RICHARD APPELDOORN:** Right and so I think that's the level of
26 working group we need.
27
28 **GRACIELA GARCIA-MOLINER:** Once she gets the go-ahead, you are
29 accessible.
30
31 **BILL ARNOLD:** I would like to have clean lines of communication
32 and an understanding on the other end that we will be asking
33 questions. This is great.
34
35 **TODD GEDAMKE:** Bill, I think we started at one point looking at
36 at least a conceptual way and do we want to make -- It's on the
37 record and you made the statement that I think our
38 recommendation is really to make sure that you've got
39 flexibility in this tiered control rule setup, so that we can
40 incorporate data-limited methods or alternative methods that may
41 be developed. As long as we're all on the same page, then I
42 think that needs to be the most explicit thing, because --
43
44 **BILL ARNOLD:** I think it should be explicit.
45
46 **GRACIELA GARCIA-MOLINER:** Incorporating what?
47
48 **TODD GEDAMKE:** The range of potential options. I don't know if

1 you need to put it in there, but --
2
3 **BILL ARNOLD:** I'm not sure it has to be in the recommendation,
4 but if it's in the notes.
5
6 **TODD GEDAMKE:** Okay and I just want to make sure, because I
7 think it's really -- For us to move forward, we don't want to be
8 back in this situation we're in. Let's set this up once so that
9 we can be ready for changes.
10
11 **BILL ARNOLD:** Just so you guys know, Graciela asked if I'm okay
12 and yes, I'm okay and I am not upset. I am just -- There's a
13 lot of pressure on this thing and there's a lot of pressure
14 coming from the other direction on getting these things done.
15
16 **GRACIELA GARCIA-MOLINER:** Let's do something, because Action 3,
17 the way it's set up right now, I think that we should not be --
18 This has already been sent to the council and so I think that we
19 should put a big X on the Action 3 that we're starting from
20 scratch.
21
22 **BILL ARNOLD:** I don't mind saying that, Graciela. Like I said,
23 that was just a strawman.
24
25 **GRACIELA GARCIA-MOLINER:** No, but they've already seen it and so
26 when we go through the actions, in this case things have
27 changed. We will have a big X over it.
28
29 **BILL ARNOLD:** If you want to do that, that's fine, but I can
30 explain to the council during my discussion with them that this
31 is what it was set up there for, just to give us a starting
32 point. We had great discussions and input from the SSC and now
33 we're starting to get some ideas of where we want to go and then
34 the SSC recommendation on this is what we're going to do.
35
36 **TODD GEDAMKE:** I think the council would appreciate a brief
37 summary of the conversation we just had.
38
39 **GRACIELA GARCIA-MOLINER:** Are you happy with that?
40
41 **RICHARD APPELDOORN:** That works for me and then the other
42 statements support it.
43
44 **TODD GEDAMKE:** Richard, I can't come up with a word to describe
45 the -- I am looking for it to make sure it's in there and I
46 can't -- Range all the way to --
47
48 **RICHARD APPELDOORN:** So the stuff that Todd can't think of.

1
2 **KEN STUMP:** Isn't it that you want to accommodate the range of
3 potential data situations that you may encounter or something --
4 You know that different --
5
6 **BILL ARNOLD:** Something along those lines.
7
8 **KEN STUMP:** Just the flexibility to use a range of data
9 situations.
10
11 **BILL ARNOLD:** Todd was thinking more generally.
12
13 **TODD GEDAMKE:** I was thinking more generally, but I mean --
14
15 **BILL ARNOLD:** This is the NS-1 statement that allows that. I
16 think that's what you're talking about.
17
18 **RICHARD APPELDOORN:** Bill, would you be prepared to talk about
19 the draft statement, the NS-1 statement, so the council can see
20 -- Is that something that would be appropriate?
21
22 **BILL ARNOLD:** I think it would be, Richard. I am not sure and I
23 am a little hesitant to present the new NS-1 phraseology,
24 because that's not really in place yet.
25
26 **RICHARD APPELDOORN:** But you can use that and just say this is
27 not in place yet, but this is where the conversation is.
28
29 **BILL ARNOLD:** So my approach would be to say here is the present
30 NS-1 and here is the proposed NS-1 and either way you've got
31 this to work with and if the new one goes in, then you've
32 probably got more opportunity for flexibility.
33
34 **KEN STUMP:** I think you're still going to be developing the
35 proxies for these reference points. It's just that you're going
36 to use a different methodology. I mean the most arbitrary as
37 possible approach to developing reference points is to use the
38 historical landings, the average landings. I mean you're doing
39 that now and to tell the council and fishermen that -- To imply
40 that there is some flexibility so that you don't have to worry
41 about MSY or OFL or ABC may be misleading.
42
43 **BILL ARNOLD:** That's a good point. We are not really going -- I
44 am not sure that's not what the NS-1 approach is -- Well, to
45 some degree yes, because it allows you to use the control
46 regulations like, for example, for lobster we could, given this
47 flexibility, we might be able to use that three-and-a-half
48 inches as your control.

1
2 **TODD GEDAMKE:** The original language, and I am just
3 paraphrasing, said something about if you cannot meet these
4 requirements, then alternatives -- I mean there was proxies put
5 in place to meet those requirements, whether you want to say it
6 as this or say it as that, but to meet those requirements, legal
7 mandates were put in place. This is basically saying that if
8 you can't meet those and if you can justify an alternative
9 management approach, then that was kind of -- I don't know how
10 much it can be expanded upon that.

11
12 **KEN STUMP:** You are still trying to prevent overfishing and to
13 sustain the stocks and to conserve them and to do that, you were
14 using a different approach, but you're trying to achieve the
15 same objective.

16
17 **TODD GEDAMKE:** Once you say the word "overfishing", it's MSY and
18 overfished. Once you say that and use that term, then you're
19 into a very specific -- This is where the language gets tricky
20 and during the National SSC Meeting, we had this conversation
21 and it was Rick Methot that made a comment during that meeting,
22 and I don't want to misquote, but this same exact discussion
23 came up and he said this is not any -- This isn't an excuse to
24 avoid having those objectives not to put an indicator control
25 rule or a size control rule in place and just let it fly.

26
27 It's a stock and we still have the objectives of improving our
28 data collection and to reach those points, but there may be
29 saying -- Right now, this approach is maybe not meeting the
30 objectives as best it could and so the indicator can be put in
31 place to ensure that we are managing in a meaningful way while
32 we collect the information we need. Do you see what I'm saying?
33 It's slightly different, but does it make sense?

34
35 To follow on that, I think that this is -- This is an
36 opportunity. This is not -- To expand upon this and to actually
37 develop alternatives that would be defensible that could -- Like
38 Bill could say we need to take this to GC and it's not going to
39 be something we're going to do on a conference call as we move
40 down this road, but I think it's important to recognize the
41 importance of this as a whole, not only for here, but for the
42 process as a whole.

43
44 The Caribbean was in mind when they wrote this and there is
45 other places and I think we're a perfect example here of why
46 these kinds of potential openings of these different avenues are
47 taking place and I think we should really be taking advantage of
48 this and if we have a white paper on this thing is going to take

1 a good bit of time, but I think it's really --
2
3 **RICHARD APPELDOORN:** Is this change in language allowing both
4 something, which I think it would be, where you're actually
5 tracking indicators to look at performance, but it would also
6 include something totally extreme, where you just say basically
7 I'm locking in 50 percent of the stocks in no-take MPAs and
8 therefore guaranteeing that we're meeting this stuff and it's
9 actually an MSY-less approach, if you will.
10
11 **TODD GEDAMKE:** I mean what you just said, when we were first
12 faced with this dilemma and I sat there and I said, how can I go
13 to GC or how can I go and say yes, we definitely have prevented
14 overfishing, 100 percent?
15
16 Your MPA idea is -- But when you start putting in any movement,
17 you're not talking about 50 percent of the areas. You get some
18 simulations that put it up to 70 or 75 percent.
19
20 **RICHARD APPELDOORN:** Whatever. I am just making it up, in the
21 sense that there might be ways to do this where it's a more
22 ecosystem-based approach, where we've taken care of stuff and
23 you can do all the other stuff you want to enforce it and we
24 should never have a problem and so you would never specify an
25 MSY and it's MSY-less.
26
27 **TODD GEDAMKE:** I mean I think that -- That's why I said I think
28 if you start not -- I mean explicitly stating that you're not
29 specifying an MSY, you have to have a strong justification for
30 how that's responsible management.
31
32 **RICHARD APPELDOORN:** Right.
33
34 **TODD GEDAMKE:** It's just got to be clear and that may be a very
35 difficult pill to swallow of being able to say we can't specify
36 MSY and are we currently -- Where are we currently with our
37 management? Are we actually practically doing measures and
38 management that is meeting those objectives?
39
40 The first step may be to say that there is some questions as to
41 whether we're really doing that with a proxy and, given that,
42 this other approach is a justifiable, defensible approach.
43
44 **RICHARD APPELDOORN:** Yes and everything would have to be
45 justified and that's understood.
46
47 **TODD GEDAMKE:** I think there are some alternatives, but the
48 closed areas are --

1
2 **RICHARD APPELDOORN:** No, no, I wasn't -- The cleanest example is
3 saying to do something and --
4
5 **TODD GEDAMKE:** The closed area, that type of thing can be --
6 Like you said, 50 percent gets you at the MSY realm of things,
7 but it can be a we have 20 percent of this area and let me do
8 something -- Like conch, just as an example, without being too
9 specific, but you could say 20 percent of the area closed and
10 you also have 15 percent of the habitat in this region at 140-
11 foot depths, which are divable, and so you have a deepwater
12 refugia for this stock and you could then start maybe building
13 something that says that by either de facto or explicitly state
14 areas used for diving that 25 percent of the stock and,
15 therefore, we're going to also do this other indicator that puts
16 a buffer on top of it. Do you see what I'm saying?
17
18 **RICHARD APPELDOORN:** Yes and that's exactly what I was thinking.
19 Are we done with this discussion on that point?
20
21 **GRACIELA GARCIA-MOLINER:** Creating the working group.
22
23 **RICHARD APPELDOORN:** Yes and I would like to know what's coming
24 down the pipe for these plans. We've been working on species
25 lists and we all knew this was coming from day one and I would
26 like to know what else the SSC is going to have to be involved
27 in.
28
29 **BILL ARNOLD:** Richard, at present, this is it. Your focus is on
30 Action 3. We only have three actions.
31
32 **RICHARD APPELDOORN:** All right and so then I have some -- What
33 we're talking about is the species and I haven't seen what the
34 goals and objectives of the plans are, but if we're not trying
35 to move forward with these plans, it's we're redoing how we do
36 everything. If we're setting our goals up what they were back
37 in the 1980s, we're missing a tremendous amount of management
38 opportunity and responsibility.
39
40 What I was thinking is are issues of EFH going to come through
41 this and looking at -- These are island plans and does that mean
42 these are place-based plans and therefore we should be looking
43 at management measures that are place-based relative to these
44 stocks that are looking at ecosystem-based kinds of approaches?
45
46 Is there a mandate in the objectives that we are going to try to
47 implement more ecosystem-based management or are we just going
48 to do what we've been doing for thirty years and miss that and

1 the rest of the field has moved on?
2
3 Has the council looked at their objectives in way that is going
4 to provide guidance to the NSC on these issues or is the NSC not
5 even going to be looking at these issues? That's something I
6 would like brought up at the meeting next week.
7
8 **BILL ARNOLD:** Heather Sager from Headquarters will be presenting
9 the draft policy for ecosystem-based fisheries management that
10 is being developed.
11
12 **RICHARD APPELDOORN:** And so are the plans that we're developing
13 new going to embrace that kind of philosophy in their goals and
14 objectives? If they do, then the SSC ought to be asked to look
15 at here is what we have in place now, in terms of ecosystem-
16 based management, at which the minimum is going to be EFH and
17 HAPC and whatever, and should we be looking at more stuff?
18
19 **BILL ARNOLD:** That's not a question for me to answer.
20
21 **RICHARD APPELDOORN:** No, it's not a question for you to answer,
22 but it's a question that needs to go to the council, so that
23 they will answer it, at least for me.
24
25 **JORGE GARCIA-SAIS:** Richard, the overall goal of these island-
26 based management approaches is to establish overfishing limits
27 and ACLs or revise those ACLs or -- I mean is that the end
28 product or not?
29
30 **TODD GEDAMKE:** Your answer just left the room.
31
32 **RICHARD APPELDOORN:** Maybe Graciela can answer it.
33
34 **GRACIELA GARCIA-MOLINER:** The main objective that the council --
35
36 **JORGE GARCIA-SAIS:** I mean it's difficult for me, which I am not
37 a fisheries biologist or not a lawyer, to follow on all these
38 step-wise from the bottom down and so I am thinking, okay, can I
39 look at this from the top to the bottom? What is that we are
40 after here? At the end of the line, what is the goal?
41
42 Then when you mentioned that not necessarily -- I mean we need
43 to include the OFL concept here, because now -- I mean it's been
44 difficult enough with all these poor datasets to come up with
45 what we thought was -- I was never very happy with this process
46 and MSY, nor do I know that anybody is, but now that you're
47 saying that we might not be even wanting to consider that and
48 like OFL, you just think that -- Well, you say OFL and you have

1 to go into MSY considerations and the proxy and the data that is
2 behind it and is that -- Now we say that we might not want to
3 talk about that or not consider that as the basis of our
4 management FMP considerations.

5
6 **GRACIELA GARCIA-MOLINER:** At the last SSC meeting, you had the
7 presentation to the council and this is as far as the objectives
8 of the island-based FMPs went. The SSC could make a
9 recommendation and if you would like to see these island-based
10 FMPs going towards a more ecosystem-based approach, you should
11 make that specific recommendation to the council and ask them if
12 that's what they want to do, but that's as far as it goes.

13
14 **BILL ARNOLD:** Just a couple of comments. First, you start
15 moving into the concept of completely redoing the entire
16 landscape and it's going to take many more years, which is fine
17 if that's what you want to do, but, in the meantime, you then
18 have to decide what you want to do about the reference points
19 and ACLs that are contained within the present FMPs that will
20 continue for all of those years unless you start a separate
21 process, which has been started to some degree, but only within
22 the context of these FMPs, to revise those reference points and
23 ACLs, which is going to require -- While you're building new
24 FMPs that are ecosystem-based and will take a tremendous amount
25 of work, also a tremendous amount of work will be focused on
26 develop the reference points and the ACLs.

27
28 It's already hard to get time in the Caribbean and so you have
29 to ask these hard, real questions about how you are going to get
30 this done, in a realistic sense, and what sort of battles you
31 are going to have to fight to get it done.

32
33 Finally, you have to keep in mind that all of these FMPs can be
34 amended in the future, as we do with the present FMPs. That's
35 just some thoughts.

36
37 **KEN STUMP:** Mr. Chairman, I think that it's a false dichotomy,
38 in a way, to suggest that just because the law requires you to
39 establish ACLs that you can't therefore do ecosystem-based
40 management.

41
42 The law says you must prevent overfishing and rebuild overfished
43 stocks and minimize, to the extent practicable, bycatch and
44 identify EFH and so forth. Taken that in its totality, these
45 are all addressing components of ecosystem-based management and
46 I would submit to you that the concept of recognizing that there
47 are limits in nature is an ecosystem based approach and an ACL,
48 which has only been required since the 2006 reauthorization, was

1 just recognition of that fact.

2

3 Saying that because you have to focus on these requirements in
4 the Magnuson-Steven Act means that you can't do ecosystem-based
5 management, I just think that's a false dichotomy.

6

7 **BILL ARNOLD:** Ken, did somebody say that?

8

9 **KEN STUMP:** Well, it seems like you're setting it up that you're
10 doing --

11

12 **BILL ARNOLD:** No, all I said was, and this is very important, if
13 you want to revise the entire landscape of these FMPs that
14 that's okay, but it's going to take a lot longer. I didn't even
15 use the phrase "ecosystem-based management".

16

17 **KEN STUMP:** I think if you approach the council recognizing
18 that, to some extent, they have, whether they recognize it or
19 call it that, they were doing ecosystem-based management when
20 they established the prohibition on the removal or extraction of
21 the corals. That was a visionary action, recognizing that its
22 greatest use and benefit to the nation was to leave it in the
23 water as habitat and refuge and source of food for managed
24 species.

25

26 I think that the issue of goals and objectives, which have not
27 been addressed up until now for this transition, to place-based
28 FMPs, whatever that means, is just seeking recognition of the
29 fact that this is a significant change in focus of management
30 and that in many of the actions the council has taken and is
31 proposing to take in this action do reflect ecosystem-based
32 approaches and there should be goals and objectives that are
33 articulate that.

34

35 The council's goals and objectives in the FMPs now never even
36 recognize that some of their actions are ecosystem-based and I
37 think this is just an opportunity to have a discussion about --
38 We need to be clear about those goals and objectives. They help
39 to shape your management priorities and your regulatory actions
40 and thus far, we haven't had any discussion of that.

41

42 **RICHARD APPELDOORN:** To me, it's rather critical. I mean it's
43 not sufficient to say this can be taken care of in the future in
44 an amendment. We are devising new plans right now and if that's
45 what we're doing, then let's do a new plan.

46

47 Right now, I think what I'm recommending is that we're asking
48 the council to address ecosystem-based approaches within the

1 specific goals and objectives of the plans. If we have that,
2 then from that is going to be -- You know can we look at
3 essential fish habitat in different ways that is now place-
4 based? Can we look at -- Are there new HAPCs or something that
5 we might want to suggest? You know it's all up to them to
6 accept it or not, but if we have guidance from the goals and
7 objectives of the FMPs to be able to do this, it makes things
8 certainly a lot easier. If they wanted to move this forward in
9 the future and they don't have this in the goals and objectives,
10 where is the mandate for doing that?

11
12 As I mentioned before, it's sort of like saying -- If we don't
13 have this in there, what this document is saying is that we're
14 going to go ahead and continue managing stuff in the Caribbean
15 as single species and maybe some stock complexes, pretending
16 that there is no habitat information other than the EFH as
17 specified, but management and what we can do to management to
18 make fisheries healthy and sustainable has gone way beyond
19 single species stock assessments.

20
21 If we're not explicit about this is where we're moving, we're
22 missing the boat and we might as well just go back to the 1980s
23 and, as Ken pointed out, the council actually has done a
24 substantial amount of this and stand up and take credit for it.

25
26 **BILL ARNOLD:** But that is the point of these FMPs, is to
27 acknowledge where we've come to and not to work to achieve that,
28 but when we went to island-based ACLs and island-based reference
29 points, we were basically going to, quote, unquote, place-based
30 management and that's what the EA described in setting up these
31 FMPs when we were doing the environmental assessment that we
32 prepared and got approved to go to island-based management. It
33 was because of differences among these islands and a variety of
34 factors, including culture, but also biology and ecology. I
35 mean that's the acknowledgment and that's not something we need
36 to do, but that's something that we have done.

37
38 **RICHARD APPELDOORN:** Other than the species lists, what have we
39 done that's addressing the differences in biology and habitats,
40 et cetera, that exist in the islands?

41
42 **BILL ARNOLD:** What would you prefer? I mean we can't just do
43 stuff because we want to do stuff. We've got to have some
44 purpose that actually provides a tangible result and achieves
45 the goals of management in the U.S. Caribbean federal waters and
46 so we've got closures and we've described EFH and all those
47 things will be in the plan. Just saying we're going to need
48 more closures does not achieve --

1
2 **RICHARD APPELDOORN:** How is EFH described, on a single species
3 basis?
4
5 **BILL ARNOLD:** No, it's described in those essential fish habitat
6 five-year plans that basically cover the extent of our knowledge
7 of habitat in the U.S. Caribbean.
8
9 **GRACIELA GARCIA-MOLINER:** But that doesn't bring into the point
10 where you have the habitats used with the information that you
11 have from the fisheries and what is happening on the islands.
12
13 **BILL ARNOLD:** Okay and this is really important, because what we
14 have done is spend a lot of money, time, and effort on SEDAR-46,
15 which is essentially a single species-based approach, that
16 you're now saying we shouldn't be taking.
17
18 **RICHARD APPELDOORN:** No, I didn't say that. I am saying that
19 there is stuff beyond that that's really important if you want
20 to have healthy, sustainable fisheries.
21
22 **BILL ARNOLD:** Like what? I mean I'm not saying it doesn't
23 exist, but I am saying that we have to target it and be very
24 specific about it.
25
26 **RICHARD APPELDOORN:** Well, protecting critical habitat would be
27 an obvious one. Protecting spawning stocks would be an obvious
28 one and protecting spawning biomass.
29
30 **BILL ARNOLD:** So we do the spawning stocks with the area and
31 seasonal closures, right?
32
33 **RICHARD APPELDOORN:** That is one way of doing it, yes.
34
35 **KEN STUMP:** We've sort of backed into that over the last ten
36 years.
37
38 **BILL ARNOLD:** Does that make a difference? They're there.
39
40 **KEN STUMP:** Whereas all this is saying is if you're starting
41 over from scratch and you presumably are taking a new place-
42 based approach, as opposed to just a simple species-based
43 approach -- If so, why not acknowledge -- You have the
44 objectives in the plan anyway and why not acknowledge that
45 protecting spawning habitats, for instance, and other important
46 habitat types is an important objective of management of the
47 long-term sustainability of the fisheries? Those are the kinds
48 of objectives that would clarify and justify those kinds of

1 regulatory actions.

2

3 **BILL ARNOLD:** That sounds great, Ken. That's a great idea.

4

5 **JORGE GARCIA-SAIS:** That's exactly what the fishermen say. The
6 fishermen say why are you restricting all of this if you've
7 already put the main restriction on the seasonal closures and
8 the area closures and we thought that was enough and now you're
9 bringing up all these ACLs, which are based on crap data and all
10 of that.

11

12 They feel like we don't know what we're doing. That's what they
13 feel. They know how to fish and they know the implications of
14 fishing on the spawning aggregation and so when they said, okay,
15 let's close it and we're for this and we're all for the closed
16 areas, that kind of management, fisheries management, approach
17 was well received by them, but to depart from there and to enter
18 into these ACL determinations, that caught them by surprise and
19 they are hesitant and they are not in agreement with the process
20 and with the results.

21

22 That is a dichotomy right there on top of that and I just wanted
23 to make that comment. I think that we shouldn't be modifying
24 that and that they can accept. They know what the realities of
25 those are and the area closures are.

26

27 **VANCE VICENTE:** More than that, it's how you guys are measuring
28 the effect of it and one way of going about that is emphasizing
29 more fishery-independent studies. That's the only way that we
30 can measure the effectiveness of all this crap that we keep
31 talking about.

32

33 **JORGE GARCIA-SAIS:** Either that or introduce the effort
34 measuring into this data analysis, which we don't have. That's
35 one of the main problems that -- There is so very little data on
36 effort.

37

38 **RICHARD APPELDOORN:** Do we have assessment models that take into
39 account that we just closed off something?

40

41 **SHANNON CALAY:** Absolutely. That can be easily done and it can
42 also be quite -- We actually have a number of assessment models
43 now that allow you to incorporate environmental effect, if you
44 can address it. You can hypothesis test it, but it will allow
45 you to do hypothesis testing of -- If you're concerned about a
46 recruitment event or if you're concerned about a mortality event
47 and you could probably also explore other options that I have
48 not considered yet.

1
2 These options are becoming more and more available and they can
3 also be coded specifically, as long as we know what they -- You
4 know you have to know what the effect operates and on whether
5 that effect causes a mortality for spawners or a mortality for
6 juveniles. You know you need to know the process and once you
7 understand the process, it's relatively easy to incorporate the
8 effect in the stock assessment model.

9
10 What we don't really have a lot of progress on yet is the -- You
11 know we can create the simulation or we can use those
12 approaches, but how we're using them in a fisheries management
13 context hasn't been thoroughly identified yet, at least not to
14 my satisfaction.

15
16 **VANCE VICENTE:** I think that the main complaint of the fishers
17 is that they know that there are other factors affecting the
18 stock. Number one is climate change and number two is changes
19 in the water quality.

20
21 I mean these systems, seagrass beds and coral reefs and
22 mangroves are all autotrophic systems and so if you reduce the
23 light, specially for seagrass beds and coral reefs, they depend
24 on the photosynthesis and any variation is -- Anything that
25 increases the turbidity, meaning because of nutrient or because
26 of higher chlorophyll contents or water discharges or runoff
27 from near-shore activities, that's another factor.

28
29 Number two is fish impediments. Have we identified fish
30 impediments as a possible source of reducing stock? Like, for
31 example, I was thinking in some areas, in the Great Lakes, for
32 example, they found out that certain dams were blocking the
33 migratory path of rainbow trout and whatever and they remove it
34 and the fish stock increased. You know they increased the
35 spawning ground and everything like that, but here, what
36 impediments do exist? I can think of a few. Pipelines, for
37 example, they interfere with the migration of conch and they
38 pile up and maybe marine fiber optic cables have a long-term
39 effect and we need to address that in the FMPs other than
40 beating the fishers over their heads and reducing the catch.

41
42 **BILL ARNOLD:** Before Richard leaves, let me address this,
43 because I want him here, he and Ken. If we set up goals and
44 objectives that say just in general we want to achieve these
45 sorts of ecosystem-based management concepts, what we can do is
46 then describe how we are attaining those goals and ABT and the
47 mutton snapper closure, seasonal/spatial closures, minimum size
48 limits for parrotfish and prohibition of the big three

1 parrotfish are ways to ensure -- Critical settlement substrate
2 or cover and we can describe this stuff.

3
4 You don't necessarily have to add actions that say this is what
5 we're going to do unless you have specifically targeted
6 something you want to do, like we need to implement an HAPC
7 here. That would be an action, or we need to close this area
8 here. That would be an action. Otherwise, we simply
9 incorporate what we're already doing into the new FMPs.

10
11 **SHANNON CALAY:** So something pragmatic and practical, although
12 time consuming, this is what we put together for the Gulf of
13 Mexico. We prepared a huge interdisciplinary team and prepared
14 an ecosystem status report for the Gulf of Mexico.

15
16 An interdisciplinary team from NOAA and other agencies put
17 together an ecosystem status report for the Gulf of Mexico.
18 It's a NOAA technical memorandum, which it's Number 653. It
19 basically goes through over a hundred different indicators of
20 the ecosystem in the Gulf, including climate drivers, physical
21 pressures, state of benthic habitats, state of lower tropic
22 levels, upper trophic levels, fishing indicators. I am on page
23 6.

24
25 **BILL ARNOLD:** Shannon, what's the title of this?

26
27 **SHANNON CALAY:** Ecosystem status report, Gulf of Mexico. I was
28 reading just the index, the table of contents. We intend to
29 update this about every two to three years for the Gulf and so
30 this would be something you could do. You know you could
31 request that such a report be created.

32
33 I can't tell you that Mandy Karnauskas is going to do this again
34 for the Caribbean, but it was a very large interdisciplinary
35 team. It was twenty or thirty different participants and it
36 took about two years to produce this.

37
38 **BILL ARNOLD:** All right and so the way we have planned on doing
39 this very thing is through that fishery ecosystem plan that I
40 had discussed previously with you guys and with the council.
41 The reason for that is because ultimately the ecosystem is not
42 Puerto Rico, and I hope that you guys tear into me too much for
43 this, but ultimately you have to consider the ecosystem at least
44 at the regional level and really at a larger level than that.

45
46 The plans are island-specific, but the ecosystem itself is much
47 bigger than that and so we do intend to do this, but we kind of
48 wanted to do it in a step-wise fashion. This follows the

1 development of the FMPs and it doesn't coincide with it and it
2 is integrated into them, but it needs to be done and we have
3 every intention of doing it. If the council doesn't want to do
4 it that way and if NMFS doesn't want us to do it that way, then
5 we won't, but --

6
7 **GRACIELA GARCIA-MOLINER:** Who didn't want to --

8
9 **BILL ARNOLD:** No, if they didn't want to, but that's the present
10 plan that's been presented and nobody has said no, don't do
11 that.

12
13 **SHANNON CALAY:** What this type of a report enables us to do is
14 if someone is concerned about a particular climate driver, for
15 example, we can go get that data and get that indicator and if
16 we understood how that climate driver would actually affect the
17 fish stock, we could actually prioritize that in the model and
18 test how that climate driver interacted with that stock in the
19 historic period and we could do some hypothesis testing about
20 how it might impact in the future, but the trouble is when
21 you're in an assessment process and people just want you to test
22 abstract concepts -- Without the actual numeric indicator and
23 some idea of how the process would affect the fish stock, it's
24 nothing but a bunch of what ifs.

25
26 **BILL ARNOLD:** Right and we don't have that and probably won't
27 any time soon.

28
29 **SHANNON CALAY:** So it really needs to be taken from concepts and
30 ideas to actual numeric indicators and that can be done. This
31 data exists and it's essentially public data. It's been used
32 for gag grouper, red grouper, and red snapper so far and we try
33 to use them whenever we can identify something that the SEDAR
34 group is confident has an effect on that stock that can be
35 understood and prioritized, essentially.

36
37 Then we do use -- We have not used this full suite. We have
38 used episodic mortality, like red tide. We have explored
39 changes in natural mortality due to predation and we haven't
40 used it -- We have only used it in sensitivity and we have
41 looked at the recruitment signal that you get from the Gulf of
42 Mexico loop current signals and so we have done those things and
43 basically we explore -- As they become available to us, we
44 attempt to use them if they are appropriate. It's a slow
45 process, but we're moving forward.

46
47 **CHURCHILL GRIMES:** So in your working group or whatever, does it
48 involve people from the Center or from the --

1
2 **SHANNON CALAY:** There's a list. If you look at the report,
3 there is a list of participants and it's probably University of
4 Miami and the Southeast Fisheries Science Center and a number of
5 other participants from other places. There you go.
6
7 **GRACIELA GARCIA-MOLINER:** One thing is we do have a NOAA
8 technical memo on the primary productivity or something like
9 that from 1987 and that was the first attempt of the council to
10 get all the information and so one thing that could happen is
11 that now that the EFH review is coming up, we may be able to
12 expand it and to do something like this. It would take longer.
13
14 **BILL ARNOLD:** I don't think the habitat folks are going to want
15 to do it, Graciela.
16
17 **GRACIELA GARCIA-MOLINER:** Well, the council is going to tell
18 them that this is what we are going to do and probably get a
19 grant specifically to do that, because we have been late before
20 in trying to finish things and that's fine, because if this is
21 something that won't solve more problems then -- You know
22 getting a five-year review and it's just a bunch of paper that
23 doesn't take you anywhere -- You know this is a practical
24 approach, or at least I think it's a practical approach.
25
26 Not only that, but we just came back from a meeting that the
27 Gulf of Mexico was saying we have to look at the Caribbean,
28 because that is probably what is influencing a lot of the stock
29 that is happening in the Gulf and so if the council -- I even
30 thought the council can go to the SEDAR Steering Committee and
31 say we want to do this type of approach in the next year or so,
32 but that would be the condition of the staff, because I am going
33 to tell the council that maybe it would be worthwhile looking
34 into something like this.
35
36 **JORGE GARCIA-SAIS:** In the report for SEDAR, where they have the
37 fishing indicators or something like that?
38
39 **KEN STUMP:** This in the new NOAA Climate Science Policy and it
40 is also embedded in the EBFM policy.
41
42 **GRACIELA GARCIA-MOLINER:** I will send this out to everyone.
43
44 **SHANNON CALAY:** Yes and this is -- This is fairly comprehensive,
45 but we are still adding.
46
47 **GRACIELA GARCIA-MOLINER:** Another thing that is happening is
48 that SEDAR for the Caribbean is finally making a -- Walter has

1 been working on that and so we're really happy and so we do have
2 --

3
4 **SHANNON CALAY:** A lot of this information comes from like
5 satellite observations and they are available. It's just a
6 matter of getting the information in the project, but a lot of
7 the information contained in this report is actually held by
8 NASA and by other partners that we're able to query them for
9 that. It isn't necessarily data that the Caribbean has to
10 collect themselves. There is data out there that may be of
11 interest.

12
13 **GRACIELA GARCIA-MOLINER:** (The comment is not audible on the
14 recording.)

15
16 **KEN STUMP:** There is information, like the report on the USVI
17 marine protected areas, ten-year review, the status of fish and
18 habitat. I have never heard anyone discuss it in this fishery
19 management context and that is incredibly relevant and valuable
20 information on the health of that ecosystem in the USVI.

21
22 **GRACIELA GARCIA-MOLINER:** What was that?

23
24 **KEN STUMP:** It's the report, the ten-year review of the federal
25 MPAs. That kind of information is already there and it's just
26 siloed off into some other division of NOAA and no one thinks to
27 use it, but that is what an ecosystem-based approach would help
28 you to overcome, is this tendency to put everything in little
29 boxes and the data is there.

30
31 **GRACIELA GARCIA-MOLINER:** EPA has also been working in
32 collaboration with other agencies to put together a model on
33 corals and fish and so there should be a report coming out on
34 that pretty soon. I mean everything has its limitation, because
35 they are talking about one transect in one place over one point
36 in time, but still it's information that can be put into this
37 context. Is there any specific recommendation that -- I will
38 send the NOAA tech memo around.

39
40 **VANCE VICENTE:** Graciela, I would say ask the council to address
41 an ecosystem-based approach with goals and measurable, definable
42 objectives of the island-based FMPs. Really, to give an example
43 of why it's so frustrating not to see any -- We have shut down
44 several areas and created several MPAs and what evidence, what
45 scientific evidence, do we have, like, for example, that as a
46 result of those actions there has been increased fish
47 recruitment downstream from these areas? Do we have that? Can
48 we say that? Do we have that information? Then how do you

1 make sure the --

2

3 **JORGE GARCIA-SAIS:** (The comment is not audible on the
4 recording.)

5

6 **VANCE VICENTE:** Exactly.

7

8 **KEN STUMP:** Rick Nemeth did some work on the red hind MCD and he
9 found that -- That study is a little bit dated now and it was
10 very positive. It showed strong recruitment and so I mean there
11 is some --

12

13 **VANCE VICENTE:** But the point is that that needs to get to the
14 public. There needs to be much more communication with the
15 fishers and with the other stakeholders and we are lacking that.

16

17 **JORGE GARCIA-SAIS:** The fact that it has been shown that red
18 hinds have shown an increase in abundance and size, that
19 recognized that, but we what we don't know is if that has
20 influenced recruitment into other areas.

21

22 For example, in Puerto Rico, we have closed areas that had been
23 spawning grounds for red hind in Tourmaline, Abrir la Sierra,
24 and Bajo de Sico. Those areas I have surveyed and the red hind
25 population has never recovered and so there is some other things
26 that it needs and probably recruitment habitats and the dynamics
27 of recruitment somehow and still these areas where there is a
28 lot of red hinds have not been able to influence the recruitment
29 and the replenishment of the populations in areas where
30 previously these species were fairly abundant.

31

32 For example, inside Desecheo, I still remember back in the early
33 1980s that the red hind were incredibly abundant in that zone
34 and still now, with all this fishery management we have put in
35 place, still the red hinds are even rarer now inside Desecheo
36 and so places where there were prime habitats for red hind,
37 fifteen years after our management, those areas are depleted.

38

39 **KEN STUMP:** But if you look at the Tortugas closures, the
40 Steamboat Lumps, and the other one in the eastern Gulf of
41 Mexico, those started out as seasonal spawning closures and then
42 the Gulf Council decided that there was no indication that there
43 was improvement in the status of the gag grouper, for instance,
44 in some of those locations and they ultimately made them year-
45 round closures and subsequently those areas have been shown to
46 be refuges for spawning-sized fish and there's some indication
47 in the Tortugas that they have been a positive benefit in
48 improving recruitment in mutton snapper, which has spawning

1 aggregations in those locations.

2

3 I think the discussion that we need to think about is our
4 seasonal closures may not have been adequate, because fishing
5 mortality occurs in those areas for much of the year and maybe
6 we need to rethink the timing of the closures or make them year-
7 round closures. Those are the kinds of discussions that we
8 haven't really had.

9

10 **JORGE GARCIA-SAIS:** Or the enforcement issue, which nobody wants
11 to touch. Nobody wants to touch that, but one thing is the
12 letters in the paper and the other thing is the actual
13 enforcement.

14

15 **GRACIELA GARCIA-MOLINER:** So do you have any other specific
16 recommendations?

17

18 **TODD GEDAMKE:** I would just like to point out that
19 recommendation -- The recommendation, as written, is ask the
20 council to address ecosystem-based approaches to the goals and
21 objectives of the island FMPs and practically, what is going to
22 happen out of that? Can someone envision to me, if that
23 happened in a perfect world, what that means?

24

25 **GRACIELA GARCIA-MOLINER:** Give me a couple of questions, very
26 specific questions, that you want to ask them and --

27

28 **TODD GEDAMKE:** I did not put this one up there. I think that
29 ecosystem-based approaches -- I have never had anyone that
30 disagrees with it.

31

32 **GRACIELA GARCIA-MOLINER:** These are the goals and objectives of
33 the --

34

35 **TODD GEDAMKE:** It's just very hard to pinpoint what that would
36 mean for the council to address. Are you asking them to
37 address ecosystem-based approaches? I think you should ask
38 something specific. I didn't put this one on the floor, but I
39 don't think it's specific or actionable.

40

41 **JOE KIMMEL:** I think if you went to the council with that
42 recommendation they would want to see an example of what you
43 were asking for, because I think we could confuse them without
44 it, but I'm sure Bill and Graciela will guide them through the
45 process.

46

47 **BILL ARNOLD:** Yes, I've got a great example. What we would do
48 is we would take Abrir, Bajo, and Tourmaline and we would

1 establish compatible regulations in the closed areas out there
2 and make it applicable to all activities. There is an idea.

3
4 **GRACIELA GARCIA-MOLINER:** I don't think that's specifically what
5 was being meant. I think that this had more to do with the
6 future of the EFH, which was always dealt with separately from
7 the fisheries issues, when in fact the council recognized that -
8 - Ken mentioned before that coral reefs are the basis for the
9 reef fisheries that we have and so I think that it's looking
10 more at how are we going to address the fisheries in the area
11 from an ecosystem standpoint and so my question would be then if
12 we have dealt with the spawning size that we have the closures
13 at, and so these are places that are functional for that, how
14 are we going to merge the information that we have into an
15 ecosystem-based plan?

16
17 The council had gone to look at the Ecopath and Richard was
18 reminding me that it was over ten years ago when Ron Hill was
19 looking at that approach and, in fact, the Ecopath was developed
20 because of the USVI data from landings.

21
22 I think that we have things that are up in the air and so how
23 does the SSC recommend that the council look at the goals and
24 objectives for an ecosystem FMP? I mean I already wrote it to
25 look at SEDAR for a potential to do the Gulf ecosystem status
26 report to do that, look at our 1987 -- We looked at primary
27 productivity way back when.

28
29 **JORGE GARCIA-SAIS:** Graciela, is the ecosystem-based approach an
30 approach to fisheries? Is it part of the island-based
31 management idea?

32
33 **GRACIELA GARCIA-MOLINER:** Right now, no.

34
35 **JORGE GARCIA-SAIS:** Okay. Isn't that something that we need to
36 decide or is it just we're talking about it once in a while at
37 the end of a meeting?

38
39 **GRACIELA GARCIA-MOLINER:** Bill mentioned it at the beginning and
40 the idea was to deal with the ACLs now and deal with it somehow
41 before we got into all of that, but if you want everything to be
42 merged, then it's going to take longer, but it might be that
43 it's the way to go. I mean there is the NOAA ecosystem-based
44 approach to management policy.

45
46 **JORGE GARCIA-SAIS:** I think we approach it with the ACLs now and
47 I don't know.

1 **VANCE VICENTE:** We still have one time before we shut down at
2 twelve, which is the five-year --

3
4 **FIVE-YEAR CFMC RESEARCH PLAN**

5
6 **GRACIELA GARCIA-MOLINER:** What we can do, I mean we can present
7 this recommendation and then they will come back and say, well,
8 can the SSC bring us something that we can be looking at?
9 That's probably what is going to happen.

10
11 **JOE KIMMEL:** We've only got about half-an-hour left and we've
12 still got something on the agenda, Finalizing the Five-Year
13 Caribbean Council Fishery Research Plan.

14
15 **GRACIELA GARCIA-MOLINER:** That, you had received copies of it
16 and I don't know when. Richard had assigned some people to work
17 on the different aspects and as far as I know, he hasn't
18 received any feedback from that specific item.

19
20 Two things that came out of this is that you have created a
21 number of working groups and one of them has to do with the
22 Science Center's idea of specifically developing the research
23 plan for stock assessments and so that is one and probably
24 breaking it up in pieces might be more doable than the way that
25 it's set up now.

26
27 **JOE KIMMEL:** Did everybody get a copy of this?

28
29 **GRACIELA GARCIA-MOLINER:** Of the what?

30
31 **JOE KIMMEL:** The research plan.

32
33 **GRACIELA GARCIA-MOLINER:** You had it from --

34
35 **JOE KIMMEL:** We had it a couple of meetings ago.

36
37 **TODD GEDAMKE:** I think we had some specific recommendations on
38 this one the last time we spoke of it and I don't remember
39 exactly what they all were, but definitely one of them was we
40 have someone look at all of the SEDAR recommendations. I mean
41 we have spun our wheels on this.

42
43 The five-year document, probably the origin date on that file is
44 six years ago and so we drafted it up six years ago for the
45 five-year plan and it's a little bit outdated, but I mean we
46 keep coming back to the same thing, which is why reinvent the
47 wheel on this?

1 We have had SEDAR teams review and provide research
2 recommendations and something like we need local -- We touched
3 on borrowing information and one of the primary recommendations
4 since my time has always been we need regional life history
5 parameters and we need studies on life history for local waters.
6
7 I mean I will just make the same recommendation, which is that
8 we have someone dig through all the SEDARs and compile the
9 recommendations and I think if you go through the SEDARs in the
10 Caribbean, you're going to find that these same five data
11 recommendations have been put in there over and over and over
12 and that should, I think, serve as a start.
13
14 **VANCE VICENTE:** But remember that we broke up into groups and we
15 came out with very specific --
16
17 **JORGE GARCIA-SAIS:** That document is the result of that.
18
19 **GRACIELA GARCIA-MOLINER:** That's the result of anything and
20 everything that you had and so the idea was to -- This was never
21 finalized and so the idea was to input into this specific needs.
22
23 **VANCE VICENTE:** Could you send us that version, because I know I
24 received something from you regarding the research plan, but I
25 don't know if it was this.
26
27 **GRACIELA GARCIA-MOLINER:** No, Richard had sent you each a copy
28 of this with I think names of people actually --
29
30 **JOE KIMMEL:** He had assignments for --
31
32 **GRACIELA GARCIA-MOLINER:** He had assignments for each of these
33 sections.
34
35 **VANCE VICENTE:** I don't remember doing any of the assignments.
36
37 **GRACIELA GARCIA-MOLINER:** Do you remember seeing this?
38
39 **WALTER KEITHLY:** I know it came to mine, but I don't remember
40 seeing much about it after that though.
41
42 **GRACIELA GARCIA-MOLINER:** Ken, I think you were in that group
43 too, no?
44
45 **KEN STUMP:** No, I was not.
46
47 **JOE KIMMEL:** Would the information be in the minutes of the SSC
48 meeting where we discussed it?

1
2 **GRACIELA GARCIA-MOLINER:** I don't know if that was done then or
3 if it was done by email.
4
5 **JORGE GARCIA-SAIS:** Look at the first one, investigate
6 alternative management approaches.
7
8 **TODD GEDAMKE:** Ken just pointed out that's the language that we
9 actually were looking for and, to me, it just highlights --
10 Again, I am really glad that someone put "Finalize the Five-Year
11 Research Plan" on the agenda, but we're going down the same
12 paths on so many different -- We're talking about reports that
13 come from another division of NOAA that aren't being
14 incorporated and our discussions aren't even synthesized in
15 this. I mean this, to me, is a perfect example of what we were
16 just talking about before.
17
18 **GRACIELA GARCIA-MOLINER:** This might not be the final copy,
19 because I know that he sent one with more information than this,
20 but I just don't --
21
22 **TODD GEDAMKE:** We've had this on our agenda for many years and
23 it still has the same title, which is "Five-Year Research Plan"
24 and I think we should maybe put a date of origin in the title so
25 we can see how slack we are in finishing this, but if this is
26 something that actually wants to get done and someone wants it
27 done, someone has got to drive this through.
28
29 **GRACIELA GARCIA-MOLINER:** I think that you received that email
30 with the package that was prepared for SEDAR with all of the
31 recommendations that were pulled from every SEDAR.
32
33 **TODD GEDAMKE:** This ties into what we talked about a year-and-a-
34 half ago, just that in terms of -- We did discuss procedure in
35 it and procedurally, putting some of these bullets to come to
36 the SSC and have us flush all these things out and results --
37 With the recommendation for some of the research recommendations
38 for evaluation of outside assessments and, at the time, it was -
39 - We should be reviewing documents and not doing the full
40 preparation and this is -- This has been floating for many
41 years.
42
43 **GRACIELA GARCIA-MOLINER:** Actually, the council had turned the -
44 - There was a motion to have the SSC do the five-year research
45 way back when and so --
46
47 **VANCE VICENTE:** That number two, that's a perfect example of
48 what I was speaking about. That's the effects of federal

1 management regulations and I don't know who it was, and maybe I
2 did, that brought up the regulations to list Nassau grouper as a
3 species of special interest.

4
5 What do we know about it? Since we cannot catch it, we don't
6 know the status and that's how we formed the fisheries-
7 independent recommendation.

8
9 **JORGE GARCIA-SAIS:** I mean the several reports that I have
10 produced for mesophotic areas that are particularly Bajo de
11 Sico, Abrir la Sierra, and Tourmaline, it provides -- You know
12 if you read the reports, it has fishery-independent information
13 and we don't have time, but the overall conclusion is that these
14 areas are commercially fished species depleted still, fifteen
15 years or twenty years after the management regulations have been
16 put forth, in place.

17
18 I mean the conclusion here is for me very clear. These areas
19 have not been recuperated at all. There is still a very small
20 population, a marginal population, of large groupers reproducing
21 at Bajo de Sico and I highlighted that as much as I could, but
22 that's it and there's a marginal red hind population at Abrir la
23 Sierra.

24
25 Look, guys, that is what is left. There is nothing else. I
26 mean the conclusion is bold and the stories have been made.
27 Now, can go from there to say what we are doing is not enough
28 and what we are doing is not working and nothing has happened.

29
30 We keep working in the direction that we are seeing, these areas
31 that used to be prime habitats, residential habits, for these
32 species and so I mean it's not just fishery management
33 strategies that may be lacking here. It may be important and
34 that's one of my points of view.

35
36 I mean the fact that there is a regulation for closed fishing
37 areas and seasonal closures for spawning aggregations doesn't
38 mean that there is a lot of people fishing and violating those
39 regulations that we believe are working, but actually not. They
40 are in place on paper, but they are not in force and so that's
41 something that -- I mean it's not the only thing, but it's
42 something to be considered among the other things that I don't
43 think that we have time to really consider them.

44
45 **VANCE VICENTE:** No, but, Reni, it's a good point, especially if
46 you take the Nassau grouper and fishing has been prohibited for
47 the last fifteen years.

48

1 **JORGE GARCIA-SAIS:** We have a problem here and nobody --
2
3 **TODD GEDAMKE:** Can we bring this back to the research plan? I
4 mean I agree and let's use this as --
5
6 **VANCE VICENTE:** That's part of the research plan right there.
7
8 **TODD GEDAMKE:** I've got it, but we don't have time to go through
9 each individual point, but every time we leave, we never have a
10 strategy for getting this done and for this one point or this
11 one example, I mean this is one of many that are in here, but
12 how do we develop this idea into a research plan recommendation?
13 How does this as a whole get from us talking about our different
14 valid points to a plan?
15
16 **GRACIELA GARCIA-MOLINER:** Let me tell you what I do with these
17 things. What I do, whenever they request for information for SK
18 or MARFIN or any of those grants, I come back to these things
19 and whatever it is that they have in their original -- You know
20 ABC is what needs to be done or -- One reason why we need
21 something like this is to actually just have it available for
22 everyone who is writing RFPs, so that they know what the council
23 is looking for.
24
25 **JOE KIMMEL:** I think we need to find out what the different
26 assignments were that Richard made and the people that were
27 responsible to get that information back in. Then we would have
28 something to discuss, but right now we're discussing the same
29 plan that's been around for a lot more than five years. We just
30 need to beef it up and then discuss it.
31
32 **GRACIELA GARCIA-MOLINER:** The way we used to do it was that we
33 would have something like this, but it would have low, medium,
34 and high priority and that would mean right now we need this
35 information and three to five years we need that and over the
36 course of the next twenty years these are the set of data.
37
38 That's the way that we used to deal with that, but then I think
39 that this has to do with something in NOAA and they wanted it in
40 a specific format or something like that.
41
42 **TODD GEDAMKE:** That's exactly what I am getting at with this
43 being a regional document. The origins of this had and
44 objective and questions that were asked for a specific thing
45 that was six years ago. Are we still on the same boat with our
46 objectives in this document? If it is low, medium, and high and
47 that's what you -- I mean a SEDAR compilation of all those
48 recommendations that can be put together with low, medium, and

1 high.

2
3 The SSC can review that and jump up things into different
4 priority categories that can be used for either evaluating SK
5 grants or whatever you need, but, once again, why are we doing
6 this and what will it be used for?

7
8 If the origin was a NOAA activity, which I think it was and I
9 don't remember what, then let's figure out why, but just revisit
10 the question of why we're doing this and figure out -- Before we
11 go into the assignments, I think let's put something very brief
12 together that says why are we doing this five-year research plan
13 and what are we trying to get out of it?

14
15 Because if it's just a priority list, that's one thing that we
16 can do in a relatively short period of time. If it one that has
17 all the rationale and explanations for each different point in
18 there, that's a much bigger venture and that's going to require
19 some support.

20
21 **JORGE GARCIA-SAIS:** It's going to require another meeting.

22
23 **TODD GEDAMKE:** I mean it's going to require months, if not more,
24 of someone's time. You know if we were to provide the guide for
25 the future of research, then let's not do that quickly in a
26 meeting and let's --

27
28 **JOE KIMMEL:** Now we're going to do new FMPs totally and so I
29 would think that would have a great impact on the five-year
30 research plan. Maybe we ought to not use this for anything but
31 a strawman.

32
33 **TODD GEDAMKE:** We put a lot of time into these discussions and
34 so we don't want to scrap it. We just want to make sure that we
35 either restructure it or we cut and paste this into whatever our
36 current question is.

37
38 **JOE KIMMEL:** Do you have any more specific, strong feelings that
39 you might be able to help us construct a better product than
40 what we have now?

41
42 **TODD GEDAMKE:** My response was -- Because I was one of the
43 people that was -- I can't answer that question until we know
44 why we're doing it, what we're doing. If we've got a clear
45 objective for it, then I can weigh in as to whether I can help
46 with different pieces, but let's get the objectives for the
47 five-year research plan.

48

1 Then we can go from there and figuring out how to take the next
2 step, this is an easy email exchange between us to say, okay,
3 here is a one-paragraph statement of the objective and someone
4 put together that compiled list in there, but keep it -- Then we
5 can decide how we want to either expand on it or ask someone to
6 make into a large comprehensive or a reference document to guide
7 proposals and research.

8
9 **JOE KIMMEL:** Any further discussion? Well, I guess we would
10 just have to wait on this until Rich gets back and see what he
11 has to say about it.

12
13 **GRACIELA GARCIA-MOLINER:** We can find out, because it should be
14 in the notes of the SSC from -- We can take that up and he might
15 have it included in the paragraph that he sent around.

16
17 **JORGE GARCIA-SAIS:** Joe, I think that we need -- In my opinion,
18 I think that we need some closure in terms of -- I mean if the
19 ecosystem-based management approach is going to be one of our
20 priorities and so I believe we should maybe redirect research
21 towards strengthening the data needs for that approach.

22
23 If we are not going to do that, then let's forget about it and
24 focus on to something else, but, frankly, I don't know where
25 we're going. I know what we want, but I don't know what is the
26 approach that this committee is recommending.

27
28 **JOE KIMMEL:** Well, I feel like I'm kind of new here in the SSC
29 realm in this. This is my third meeting here, but I think Rich
30 had a very strong idea of how the research plan needs to be put
31 together or he wouldn't have made the assignments. I think it's
32 important that we get his view on this before we jump off again.
33 I think he might be able to address how we incorporate the
34 ecosystem-based management into the five-year research plan.

35
36 **JORGE GARCIA-SAIS:** Do you feel the same way?

37
38 **JOE KIMMEL:** Yes and whatever our FMPs -- Whatever research that
39 we need to have to improve on our management needs to be in this
40 five-year plan and it needs to be aligned with the objectives in
41 each of the plans. We are still working on the plans and so I
42 think we're kind of ahead of the game or putting the cart before
43 the horse here a little bit, but I think we need to work on the
44 research plan that goes along with how we're handling the FMPs.

45
46 **JORGE GARCIA-SAIS:** Correct.

47
48 **VANCE VICENTE:** So let's write this down and if Rich wants a

1 little paragraph of what we are recommending regarding the five-
2 year plan.

3
4 **TODD GEDAMKE:** I think we should take it one step at a time. I
5 think develop why we're doing this and let's make sure we're
6 going there and then just take that next step. Richard assigned
7 a lot of things because we had a similar discussion and we
8 weren't making progress and so he wanted pieces, but let's have
9 Richard send us the original objectives and -- I think we need
10 Richard or Graciela to make a decision on is this something that
11 is still necessary? Are the original objectives still in line
12 with what we're tasked with?

13
14 I also think it's important that you just bring up that given
15 these are island-based that we should really consider that there
16 and then one other one that I think a lot about ecosystem-based
17 management is that it means a lot of things to a lot of
18 different people.

19
20 Shannon talked about the very exploratory data and Richard says
21 that it's your spawning aggregation and it's so amorphous and I
22 think that we should also pin down what we mean by that and,
23 once again, not the Mandy Karnauskas huge document, but just
24 what does it mean to us when someone says ecosystem management?

25
26 **VANCE VICENTE:** It's a conceptual thing. You know you cannot
27 put limits on -- You establish the limits of what your ecosystem
28 is going to be, because that's what I have seen in an ecosystem-
29 based approach, to include socioeconomic factors and climate
30 change and changes in -- An ecological study of an ecosystem
31 system is a philosophy. You establish to limit the -- For
32 example, in Guayanilla, we established an ecosystem approach
33 based on that specific bay and there are other factors
34 surrounding it that modify it, modify the biological structure
35 and function, but you have to define it yourself.

36
37 **TODD GEDAMKE:** I just think if we make a recommendation that
38 says to evaluate ecosystem-based management to the council that
39 it's just -- In my mind, it's too loose.

40
41 **KEN STUMP:** You know I think that part of my frustration with
42 this discussion is that you've got to put it in the context of
43 the very robust discussion going on nationally and there is
44 going to be a presentation to the council for a proposed
45 ecosystem-based fishery management approach, which is well
46 delineated. It's online and on the NMFS website and there is a
47 distinction, as they see it, between ecosystem-based fishery
48 management versus this broader ecosystem-based management multi-

1 sector addressing things beyond fisheries.

2
3 Whether or not you agree with that distinction, that is the
4 policy that's being proposed to the councils and to the public
5 right now for acceptance and I think that you need to at least
6 be aware of it and factor it into your discussions here.

7
8 Also, I would just emphasize, in terms of the political
9 realities of the council process, that you need to recognize
10 that you have been doing pieces of ecosystem-based management
11 for years, but not in any systematic or conscience way and
12 that's why I think the discussion about goals and objectives and
13 why that's so important is to say we have been doing it.

14
15 You know, if your chairman of your council says, oh, ecosystem-
16 based management and that's amorphous and people have many
17 different opinions and we're not really ready to do that, I
18 think there's a point at which you can be corrective to that
19 point of view and say, sorry, we have been doing it, but we
20 haven't been very explicit about it and now that that is
21 becoming national policy, we want to be clearer that that is one
22 of our goals and objectives and the ways that we're trying to
23 achieve that, many of which are reflected in your current
24 research plan. I don't think we have to reinvent the wheel.

25
26 **JOE KIMMEL:** We need to beef up the parts of the FMP and the
27 five-year research plan to indicate that we have been in the
28 process for a long time. I mean every time we put a new
29 regulation into restrict something, we are protecting something
30 and that is going to be part of an ecosystem effect.

31
32 **KEN STUMP:** I mean one of the questions that was put to me was
33 is this council proposing to write comments to NMFS on the
34 proposed ecosystem-based management policy? Some councils are
35 doing that and you know this council is not and it's something
36 that the SSC could have done at this meeting, is to say -- To
37 propose to draft a comment letter on the EBFM policy and how
38 it's consistent with or not with what this council and where
39 this council wants to go. Those are the kinds of things that
40 could sort of sharpen the focus for everyone of what are we
41 doing now.

42
43 **JOE KIMMEL:** Why don't we add that to the recommendations, the
44 paragraph for Rich anyway?

45
46 **GRACIELA GARCIA-MOLINER:** What was it, to review the what?

47
48 **JOE KIMMEL:** What Ken was saying is we need to add that to -- I

1 am thinking that he was suggesting that the other councils' SSCs
2 have commented on the ecosystem-based approach to I guess
3 Headquarters. Is that where it comes from? Then maybe we
4 should do the same thing and look at that plan and look at that
5 report and make our comments to it from our point of view.

6
7 Is there any more discussion on our five-year research plan at
8 this point? Well, do we have anything else on the agenda that
9 we need to cover, Graciela? Anybody else have any points they
10 want to bring up?

11
12 **WALTER KEITHLY:** One question, I guess. We are scheduled for
13 another SSC meeting in March, correct? Okay. SEDAR-46 will be
14 completed in April?

15
16 **GRACIELA GARCIA-MOLINER:** The problem with that is that you are
17 going to be meeting with the DAPs and so the forty-five people
18 have already been contacted about the meeting and so it's going
19 to be the SSC and the DAPs.

20
21 One solution to not having the final review of the SEDAR-46 is
22 to have a presentation of the information from the Science
23 Center to the industry panels and discussion with the SSC as to
24 where that is going, because the final review will have been
25 done already and so that's probably the final report.

26
27 **WALTER KEITHLY:** SEDAR-46 will be wrapped up in April?

28
29 **GRACIELA GARCIA-MOLINER:** The review is in February and so yes.

30
31 **WALTER KEITHLY:** Shannon said it will be presented to the SSC.

32
33 **SHANNON CALAY:** It ought to be. It will be available.

34
35 **GRACIELA GARCIA-MOLINER:** It will be and the solution to having
36 two meetings is that it's going to be the SSC with the DAP in
37 March and then for the final decision of the SSC on the SEDAR-
38 46.

39
40 **WALTER KEITHLY:** Okay and so we will be meeting and do you know
41 when that meeting will be, some idea?

42
43 **GRACIELA GARCIA-MOLINER:** Richard asked me about that yesterday
44 and it will depend on when the council meeting is scheduled to
45 be and so most likely June. The SSC will meet either in May or
46 early June.

47
48 **WALTER KEITHLY:** I just wanted to make sure that it's on the

1 agenda for the SSC to review.

2

3 **GRACIELA GARCIA-MOLINER:** SEDAR-46, yes, definitely.

4

5 **JOE KIMMEL:** Okay and so there will be three SSC meetings in
6 2016.

7

8 **GRACIELA GARCIA-MOLINER:** In 2016, yes, at least.

9

10 **JOE KIMMEL:** Anything else? That's it.

11

12 (Whereupon, the meeting adjourned on December 10, 2015.)

13

14

- - -