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CARIBBEAN FISHERY MANAGEMENT COUNCIL
160TH REGULAR COUNCIL MEETING
Courtyard Marriott
Isla Verde, Puerto Rico

AUGUST 15-16, 2017

The Caribbean Fishery Management Council convened at the Courtyard Marriott, Isla Verde, Puerto Rico, Tuesday morning, August 15, 2017, and was called to order at 9:00 o'clock a.m. by Chairman Carlos Farchette.

CALL TO ORDER

CARLOS FARCHETTE: Good morning. We're going to get started here. I want to welcome everyone to the 160th Caribbean Fisheries Management Council Meeting being held at the Courtyard Marriott Isla Verde Hotel in Carolina, Puerto Rico. It is 9:06 a.m. on August 15, 2017. We are going to start with a roll call, and I'm going to start on my left with Vivian.

VIVIAN RUIZ: Vivian Ruiz, council staff.

GRACIELA GARCIA-MOLINER: Graciela Garcia-Moliner, council staff.

BILL ARNOLD: Bill Arnold, NOAA Fisheries.

CARLOS VELAZQUEZ: Carlos Velazquez, council member, commercial sector.

TONY BLANCHARD: Tony Blanchard, council member, St. Thomas/St. John.

RUTH GOMEZ: Ruth Gomez, Fish and Wildlife, St. Thomas, Virgin Islands.

MARCOS HANKE: Marcos Hanke, Puerto Rico.

CARLOS FARCHETTE: Carlos Farchette, council chair.

MIGUEL ROLON: Miguel Rolon, council staff.

ROY CRABTREE: Roy Crabtree, NOAA Fisheries.

JOCELYN D'AMBROSIO: Jocelyn D'Ambrosio, NOAA Office of General Counsel.

BONNIE PONWITH: Bonnie Ponwith, NOAA Fisheries.

JEREMY MONTES: Jeremy Montes, U.S. Coast Guard.

MARIA DE LOS A. IRIZARRY: María de los A. Irizarry, council staff.

KATE QUIGLEY: Kate Quigley, council staff.

MARIA LOPEZ: Maria Lopez, NOAA Fisheries.

RICHARD APPELDOORN: Rich Appeldoorn, SSC Chair.

HOWARD FORBES: Howard Forbes, DPNR Enforcement.

JEFF RADONSKI: Jeff Radonski, NOAA OLE.

LYNN RIOS: Lynn Rios, NOAA OLE.

ALIDA ORTIZ: Alida Ortiz, Outreach and Education Advisory Panel.

NELSON CRESPO: Nelson Crespo, DAP Chair, Puerto Rico.

JULIAN MAGRAS: Julian Magras, DAP Chair, St. Thomas/St. John.

EDWARD SCHUSTER: Edward Schuster, DAP Chair, St. Croix.

YASMIN VELEZ: Yasmin Velez, Pew Charitable Trusts.

WESSLEY MERTEN: Wessley Merten, Dolphinfish Research Program.

TONY IAROCCI: Tony Iarocci, commercial fisherman.

CHARLOTTE HUDSON: Charlotte Hudson, Lenfest Ocean Program.

TIM ESSINGTON: Tim Essington, University of Washington.

CHARLES O'BANNON: Charles O'Bannon, United States Coast Guard.

GRACE HWANG: Grace Hwang, NOAA Office of General Counsel.

GERALD GREAUX: Gerald Greaux, St. Thomas Fish and Wildlife.

MEKISHA GEORGE: Mekisha George, St. Thomas Fish and Wildlife.

NORA SANTANA: Nora Santana, STEM educator.

LUIS ROMAN: Luis Roman, Puerto Rico.

ORIAN TZADIK: Orian Tzadik, Pew Charitable Trusts.

CARLOS FARCHETTE: How about on Go to Meeting?

VIVIAN RUIZ: The Go to Meeting attendees are Adam Bailey, Cynthia Meyer, and Sarah Stephenson.

ADOPTION OF AGENDA

CARLOS FARCHETTE: Thank you, Vivian. On the adoption of the agenda, we do have an addition for Other Business. Tony Iarocci will be doing a lobster management report. Any further changes to the agenda? Carlos Velazquez.

CARLOS VELAZQUEZ: For Other Business, the conch season closure for the federal waters, please, for tomorrow.

CARLOS FARCHETTE: Okay. Any further additions?

CARLOS VELAZQUEZ: I'm sorry. Give me a moment. For today, it's good for the conch or for tomorrow? For me, for today.

CARLOS FARCHETTE: We'll see how the agenda runs. If we have time, we'll do it today. Any other additions? I need somebody to move to adopt the agenda.

MARCOS HANKE: So moved to adopt the agenda.

TONY BLANCHARD: Second.

CARLOS FARCHETTE: Okay. We have a motion to adopt the agenda by Marcos Hanke and seconded by Tony Blanchard. All in favor say aye; any nays; any abstentions. Hearing none, the motion carries. Next on the agenda is the Election of Officers.

ELECTION OF OFFICERS AND SWEARING IN OF NEW COUNCIL MEMBERS

MIGUEL ROLON: For the election of officers, we would like to ask the Coast Guard representative -- You don't have a vote, and, at this time, you can chair the section where we elect officers. For the election of officers, you need a motion, but you don't need a second. Just a motion that I would like to move that this person be considered for chair. If you don't have any other candidate, then you open the vote to elect that person as chair, and you follow with the vice chair, and you do the same. We need to have a motion, but you don't need a

second, and then he will determine at what time you open the floor to vote.

JEREMY MONTES: We will start with Chair.

TONY BLANCHARD: **Motion for Carlos Farchette to be Chair.**

MARCOS HANKE: Second.

MIGUEL ROLON: Any other candidate for Chair?

ROY CRABTREE: I move the nominations be closed.

JEREMY MONTES: We will move to a vote. **All in favor, say aye; any nays; any abstentions. The ayes have it.** (Applause) Now we will move on to Vice Chair.

TONY BLANCHARD: Marcos Hanke.

JEREMY MONTES: Any other nominations?

ROY CRABTREE: I move the nominations be closed.

JEREMY MONTES: All right. We will move it to a vote. **All in favor, say aye; any nays; any abstentions. The ayes have it.** (Applause)

MIGUEL ROLON: Thank you. To our surprise, we have the same Chair and Vice Chair as last year, and so now we go, Mr. Chairman, with the rest of the agenda.

CARLOS FARCHETTE: Thank you very much for electing me as Chair again. I am coming to the end of my term on the council, and so I hope for the best. Next on the agenda is Consideration of the 159th Council Meeting Verbatim Transcriptions.

MIGUEL ROLON: Hold on. We have an illegal alien here until he gets sworn in, Mr. Marcos Hanke.

CARLOS FARCHETTE: Yes, that's right.

(Whereupon, Mr. Hanke was sworn in.)

ROY CRABTREE: Congratulations, Marcos. Welcome back to the council.

MARCOS HANKE: Thank you.

CONSIDERATION OF THE 159TH COUNCIL MEETING VERBATIM TRANSCRIPTIONS

CARLOS FARCHETTE: Okay. Consideration of the 159th Council Meeting Verbatim Transcriptions, any corrections or additions to the verbatim minutes from the last meeting? Hearing none, I need a motion to adopt.

MARCOS HANKE: Motion to adopt the transcriptions.

TONY BLANCHARD: Second.

CARLOS FARCHETTE: We have a motion to accept the transcription verbatim minutes by Marcos Hanke, and it's seconded by Tony Blanchard. **All in favor say aye; any nays; any abstentions. Hearing none, the motion carries.** Next on the agenda is the Executive Director's Report and Miguel Rolon.

EXECUTIVE DIRECTOR'S REPORT

MIGUEL ROLON: Thank you, Mr. Chairman. First, with good news. The administration approved our budget for the eight councils, and so we will be able to finish our year with enough funding to carry on our responsibilities. As you know, at the beginning, it was kind of iffy whether we would get the monies on time, but we all got it, all the eight councils, and so we will be able to finish the year with the funding needed for our operations.

We have two announcements with international bodies. Remember that the council has been working with international organizations like the Western Central Atlantic Fishery Commissions and others, OSPESCA, through the years, since the beginning of the council. This year, we will have a meeting of scientists and administrators from twenty countries or more to discuss fish aggregations and how to protect them, and we are going to have experts from Mexico and the United States and others discussing this important issue of the fish that aggregate to spawn and how to protect them.

Then we will have the decision-makers of the different countries, to see if we can adopt a strategy that has been recommended for the last several years, but we would like to see if that strategy comes to be an understanding among the nations in the Caribbean to manage this important species.

We also have, for tomorrow, and Alida will talk a little bit more about it, but we have what we call the Sustainable Seafood Festival, and that is an idea that Diana initiated, and we

copied, adopted, what they do at NOAA with the Ocean Week activity, where they have coral reef scientists and people putting together a conference regarding the protection of coral reefs and management of the coral reefs at the national level and international level.

Within that activity, they have what they call the Fish Fry, which is an activity by NOAA where we have 1,500 people attending, and you have officials from Washington, and we have, at this time, the Secretary of Commerce, and I took a picture with him, but he's so shy that I didn't want to put it there, but the Secretary of Commerce endorses these kinds of activities, because he believes this is the way to promote sustainable seafood in the nation.

We will do -- Our first one will be this November the 2nd, and the Virgin Islands did it already. They have a couple of festivals like that, and so we tailored our festival to what the Virgin Islands has done, and, if this is successful, we will move next year to maybe coordinate with the government of the Virgin Islands and the fishermen of the Virgin Islands and anyone else who wants to help to do the same in the Virgin Islands.

The other international news we have is we moved the queen conch international meeting from 2017 to 2018, given that that will take a longer time to invite the people, because, at that time, the plan that the Caribbean Fishery Management Council put together with expertise from Columbia and Puerto Rico -- Dr. Richard Appeldoorn and Dr. Martha Prada developed that FMP, and it was reviewed by scientists from the different countries in the Caribbean that deal with queen conch.

That meeting will take place in April of next year, and, again, that meeting is an official WECAFC meeting. It's by invitation only of the Caribbean countries that belong to WECAFC, and the U.S. delegation is composed of people from the Department of State and National Marine Fisheries Service, and that meeting will be the key to see if we can adopt the management plan throughout the Caribbean.

My last part of the report will be a composite report between me and the fishermen. Graciela and others have been working on a project to look at the mesophotic and aphotic habitat and the species that surround Puerto Rico and the Virgin Islands, and that means deepwater habitats where light does not penetrate and deepwater habitat beyond the shelf area.

Luis Roman has been working with the people who are doing this work, and I asked him to see if he can address the group. It's just a brief update of a project that is an ongoing project, and, when we finish the project next year, we will have a complete report, final report, for the council, and it will be distributed in writing and in electronic format. Before Luis says anything, Damaris, would you like to introduce yourself for the roll call?

DAMARIS DELGADO: Good morning. Damaris Delgado, and I am the Director of the Bureau of what was called Fish and Wildlife before in DNER, and so, for the people that don't know me yet, and I'm sorry for the delay. I was working with the Office of the Secretary.

LUIS ROMAN: (Mr. Roman's presentation was not transcribed.)

CARLOS FARCHETTE: Next on the agenda is the Scientific and Statistical Committee Meeting Report and Dr. Appeldoorn.

MIGUEL ROLON: Before Richard says anything, Diana has distributed these little pieces of paper. Those of you who want to eat here, please fill it out and give it to her.

SCIENTIFIC AND STATISTICAL COMMITTEE REPORT

RICHARD APPELDOORN: Thank you, everybody. The SSC has been really busy, and, as you I'm sure are all aware, what we're working on furiously is to set reference points, which is Action 3 for the island-based plans.

To get right into the alphabet soup, there are three reference points that have to be generated. The OFL, overfishing limit, and this then gets reduced to an allowable biological catch, or ABC. That reduction is due to our scientific uncertainty about where we think the stock is at, and then there is a further reduction from the ABC to get to the ACL, or annual catch limit, and that reduction is due to management uncertainty, to be able to achieve those goals.

The first two, the OFL and the ABC, are the job of the SSC, and the latter one is the job of you all at the council, and so, to get to these limits, it's a fairly involved task, and I'm going to walk through that, to let you kind of know what we've been going through and then to understand where we are.

We are working with Tier 4, and let me just go through that, and then I will give a graphical representation of how that actually

works. This is for systems where we have no accepted assessments available, and so we pretty much have catch data and whatever other biological information that we know about the species.

We have two sub-tiers, 4a and 4b, and the criteria for separating these largely is our thoughts on whether the species or stock is likely to be subject to overfishing, and so, for 4a, the condition for use is that there is no accepted assessment, but the stock is unlikely to be subject to overfishing. However, if we cannot achieve consensus on that, then it would automatically go to Tier 4b. If we cannot use Tier 4a, Tier 4b should be used.

Tier 4a, we start off with our overfishing limit, and then that gets modified by a scalar times the 75th percentile of the reference landings period, and so reference landing periods are something we're going to have to deal with and determine the 75th percentile of that, and then that's going to get multiplied by that scalar. The scalar cannot be larger than two, depending on the perceived degree of exploitation, the life history, and ecological function.

Then, from that, we develop the ABC, and so there's a buffer that's applied to the overfishing limit, and that buffer must be equal to or below 0.9. The buffer is due to scientific uncertainty. These are stocks where we have no assessments available and our uncertainty is going to be fairly large to start with.

4b, our conditions for use is there no accepted assessment, but we think the stock is likely to be subject to overfishing or it's not clear. That is to say that a consensus could not be reached to use Tier 4a. Here, it's the same process. We start with the OFL, and we're multiplying it by a scalar, but that scalar is now multiplied by the mean of recent landings, because that's what we think about when we say overfishing, that it's happening now, and it's from the mean and not from the 75th percentile, and that scalar now must be less than one.

If we think that it's likely to be overfished, we don't want to say, okay, let's go fish more, and so it has to be less than one, depending on our perceived degree of exploitation, life history, and ecological function, and then the buffer would be applied as before.

There is some concern about the Tier 4 language that was expressed, and I should explain that I was only at the meeting

for the first half. I had a family crisis, and I had to leave, and so there is some of this that I was not there for the full discussion, and I am working off the notes of others and some discussions that I had both with Graciela and with Todd Gedamke, who took over for me when I had to leave, and Todd will be here, I think, later today or tomorrow.

There is an issue about the overfishing phrase, because that has some particular meaning. That's why we were trying to say likely to be and not that it is. However, there is still some concern over that phrase, and the General Counsel, in the form of Jocelyn, and the Fisheries Science Center, in the form of Shannon Calay, were going to look at possible new language, perhaps leaning towards the National Standard 1 wording of vulnerable to fishing pressure. I think the important point here is that, regardless of that change, that's not going to change how Tier 4 is going to operate. Tony, did you have a question?

TONY BLANCHARD: The thing that jumps out to me here, Richard, is this. It looks like it goes from one extreme to the next. It's either likely to be overfished or it is not likely to be overfished. There is no middle ground in between, and so it's either one or the other, a flip of a coin, and so you limit yourself to either looking at it as being likely to be overfished or unlikely to be overfished, and there is no playground in between, and so the thing is this. You have to make a choice how it's worded there as to one or the other, because there is no other option.

RICHARD APPELDOORN: That's correct, and the point here is that we're really dealing with a limited amount of information, and it's really difficult just to make the split. To try to put it down to even more categories would be even more difficult. We are aware that we're making a dichotomy here, and that gets worked out when we're talking about the scalars.

If we think it's not even close to being overfished, that scalar is going to be as high as we can make it. Dolphinfish would be a good example, perhaps, of that. If we think it's close to that level, but still not likely to be overfished, our scalars are likely to be much smaller, and so there is a way to adjust for those conditions, but we're finding it really difficult to make the call one way or the other, and you will see, when I give what our listings are now, most stuff is falling into Tier 4a.

This is what the SSC has to face. It's our decision-tree to

getting to and through Tier 4 and down to our ABC, which then goes to the council. The first decision we have to make is, is there an overfishing likelihood? If it's not likely, it's going to Tier 4a. If it is likely, it's going to Tier 4b.

If we're in Tier 4a, the next thing we have to do is to decide what the year sequence is going to be for determining that 75th percentile of landings. That may vary depending on the availability of data, and it does, as you will see. The next decision we would make on that tree on this side is the scalar, which has to be equal to or less than two, which would give us our OFL, and then there would be a buffer equal to or less than 0.9 to get to the ABC.

If we're going to Tier 4b, you see that we don't make a judgment on the sequence there, because that's based on what is happening right now, what do we think that likelihood of overfishing is, and it's not what has happened in the past. It's what is happening right now, and so we want to use what is happening now to make our decisions.

From there, that sequence is going to be the most recent three years, and we would provide a scalar, which has to be less than one. If we think it's likely to be overfished, we don't want to encourage more fishing, and then the same rationale for the buffer to get it down to the ABC. That ABC then goes to the council, and the council will look to see the degree to which they would apply a buffer for management uncertainty.

BILL ARNOLD: It wouldn't surprise me if I'm wrong, Richard, but I thought that the discussion was to not necessarily use the most recent three years of landings, but just to use the most appropriate three years of landings or something, because there were some concerns about using the most recent.

RICHARD APPELDOORN: Yes, that's correct. It's not something that we've actually reached a finalization on.

TONY BLANCHARD: I've got a couple of questions for you. Why was the 75th percentile chosen, seeing as that's the only thing I'm looking at up there, number one. Number two, this is a question for legal counsel. Is there anything in the Magnuson-Stevens Act that says some stocks could be looked at a certain year period and others can't? In other words, that you can't split the stocks, the sequence?

RICHARD APPELDOORN: To answer your first question, when viewing the year sequences that we're going to have to make a choice on,

we're already making a determination that we don't think that there is overfishing going on in this, which means we don't want to use, as our baseline, something that would, on average, generate something that was an overfishing -- That would trigger an ACL overage.

We want to get our levels higher, because we think that the stock can support more fishing, and so the first thing we wanted to do was move our baseline above the average, and we felt that a 75th percentile was a good point, because we are also dealing with variable data, and if you start -- You might have one year that's really high, and, actually, I will show an example of where that occurs, and it skews things if you were using like a mean or something like that, but, from a percentile point of view, it doesn't disturb where you're going to draw the line, and so using a percentile instead of a mean does several things.

It allows you to get higher than that mean just as your starting baseline, and from there we're going to move up, and then, secondly, it protects you from problems that might arise from an erroneous up or down figure, and we have cases of those, and you will see that when it comes to both the year sequences we're using and the example that I'm going to show.

In terms of year sequences, there is nothing -- Those are done on a stock-by-stock basis, and so what we're looking at in the Virgin Islands can be very different from what -- As I will show you, it is very different from what we're doing in Puerto Rico, because of the length of the data available to us to look at.

TONY BLANCHARD: Okay, and just to clarify this, and I don't know if you understand the second question, but what I'm looking at is, especially in the case of St. Thomas/St. John, the angelfish, the squirrelfish, and I forget what the last species was.

That was not on the previous data catch that we used to fill out, and are they going to be looked at? Can they be looked at, legally, on a different timeline than the other species that were already on the data sheet? In other words, can two different year sequences work for different species?

RICHARD APPELDOORN: Yes, absolutely.

TONY BLANCHARD: Okay.

CARLOS FARCHETTE: Roy.

ROY CRABTREE: Richard, can you put back up -- I want to see the language again that referred to if SSC consensus could not be reached, and I guess my question to you is what does the word "consensus" exactly mean? What does that mean? I read consensus, the definition, as agreement, and so what happens here if you had ten people on the SSC and eight believe it should be Tier 4a and two believe that it should be Tier 4b? Is that consensus, or how do you decide when you have consensus?

RICHARD APPELDOORN: For the most part, the SSC tries to run on a consensus basis. We have had situations where we occasionally have had to take votes on a motion, in a motion framework. However, we have had situations where one or two people will not be in agreement, but they will say to go ahead, and we will just note in the record that we did not have full agreement, but we had consensus, if they say they're not comfortable with this, but not to the point that they want to stop it. If we really reach an impasse, then we will take a vote, but that rarely happens.

ROY CRABTREE: So, if you had a couple of holdouts who were just hard on their position, you would then -- Someone would need to make a motion and pass a motion?

RICHARD APPELDOORN: I think if they were really -- I mean, the way we're looking at this, if they were really hard on their position, we would probably drop it to 4b. As I said, we have not had that.

ROY CRABTREE: That's a little concerning to me, because I can see then a situation where the majority of the SSC believed it should be 4a, but we would make it 4b. That kind of bothers me a little bit if that could happen.

RICHARD APPELDOORN: Like I said, we've never had that precedent, and so I'm not sure how we would deal with that, but I think it would have to deal with the nature of the arguments that each side was raising. If they did not feel that the scientific argument raised by the dissenters was valid enough, then they might go with 4a.

If they felt that there was enough merit there that the uncertainty remains, then we might go to 4b, but, as I said, we haven't met that, and so I can't really tell you how we would respond, other than we would base it on the best scientific information on the arguments put out at that time.

MIGUEL ROLON: I believe that the process is that, if you have a

situation like that, then both arguments would be brought to the attention of the council, that the majority says this and, the people who voted no, this is their rationale for opposing it. That happens when it's a council meeting, but, here, we're talking about the recommendation of the SSC for an ABC.

RICHARD APPELDOORN: When we've had situations where there has been a consensus to go forward, but with some dissention, I have always reported it at these meetings, just so you know where we are.

ROY CRABTREE: I am just getting, Miguel, at what it says. It could be written that if the SSC doesn't reach a consensus that the decision comes back to the council, but that's not how it's written now. It's written that, if they can't reach a consensus, it becomes 4b, and I just want people to realize that.

MIGUEL ROLON: Roy, how can we fix that, if we need to fix it? Do we wait until that situation arises, or do we --

ROY CRABTREE: This is the council's document, and so, if you wanted to say if the SSC cannot -- If consensus can't be reach, the council decides it, I guess you could do that.

CARLOS FARCHETTE: That's an idea. I have Ruth and then Blanchard and then I believe Graciela.

RUTH GOMEZ: I believe that that needs to be fixed. I don't think the option is, if it should occur, then we'll deal with it then, because, sitting in the room at the SSC, there are no fishermen. You guys will continue to collect your salaries, and these gentlemen will be out of their employment and their livelihood, and so I believe -- I am a proactive person, and I believe that that's a situation that should be fixed before it happens that way, should it arise, because this process is only going to get more complicated, and I'm sure we're nowhere near the end.

Once it happens, you already know that this is how it's going to be, because I don't think the option is by default. If you all can't come to an agreement, then you need to have a mechanism in place, and I agree that it should come to the council for us to vote, to see where we're going to go, but that's not my question.

My question is the year sequence for the USVI. Could either Bill or Rich explain to me what was the year sequence that was

used or is going to be used for the Virgin Islands, and how did you come about it?

RICHARD APPELDOORN: We're going to get to that.

MIGUEL ROLON: Before we move on, let's take this one at a time. Bill, did you want to say something regarding the fixing thing?

BILL ARNOLD: Yes, I certainly agree with all of the discussion, but I would point out that if you've got a stock that is so unclear as to be at that borderline between likely and unlikely to be whatever we want to call it, then you would either put it in the top tier, Tier 4a, with a very low scalar, and probably some pretty high management uncertainty, or you would put it in the bottom tier, 4b, probably with a pretty high scalar, which can be 0.99, versus one, and probably a similar reduction, scientific uncertainty buffer, so that you've -- This is not an either/or. It really is a continuum between 4a and 4b.

As Richard said earlier, the ones you're really confident in are probably going to get a 2X scalar and not much of a scientific uncertainty buffer, and, Richard, correct me if anywhere I'm wrong, but -- The ones that you feel like may be at risk of whatever, but not really, would be at the very high end of that tier, and so I emphasize that I wouldn't think of this as so much a black-and-white issue as a continuum from very lenient, very high ACLs, which is what everybody ultimately cares about, to very low and pretty much every possible combination of choices in between.

CARLOS FARCHETTE: Roy and then Blanchard.

ROY CRABTREE: I agree with you on the catch levels and the buffers and all of those kinds of things, but the determination of either it's undergoing overfishing or it's not and what goes into the status report to Congress and all that really is an either/or kind of thing.

RICHARD APPELDOORN: Okay. There's an important point here. We are not making a determination of whether it's overfished here. We are doing our best judgment as a likelihood, and this is the question that has the legal issue involved with it, and so we are not making that determination. We are trying to say where we should put our baselines, our starting points, and so Bill was right.

I mean, we could actually say, okay, it's 4a. Then we go to the 75th percentile, and we could put a negative scalar on that and

bring it back down, if we really weren't sure where it would be, but the point was, if we don't know what it should be, we're going to be more cautious, and 4b is the more cautious.

ROY CRABTREE: I get all of that, but, ultimately, the Fisheries Service will have to make a determination of is overfishing occurring or not, because we have to do that, and it goes into the status of stocks report to Congress.

RICHARD APPELDOORN: True, but you need an assessment for that.

ROY CRABTREE: Well, we've made those determinations in the past in the absence of assessments.

RICHARD APPELDOORN: True.

ROY CRABTREE: I am trying to envision if the SSC says, well, we don't know, but we're going to put it in 4b, and you're saying then that it's likely subject to overfishing, and I'm not sure how the Secretary then avoids coming to a conclusion that it should be listed as undergoing overfishing.

RICHARD APPELDOORN: Hence the issue on the wording.

ROY CRABTREE: Yes, and so I guess there is -- I want to hear what Jocelyn says, but there is more discussion of this to come, it sounds like.

CARLOS FARCHETTE: Jocelyn.

JOCELYN D'AMBROSIO: Thank you. The issue is, when you have the stock likely to unlikely to be subject to overfishing, and I understand that the point is that you're not determining whether or not it is, but it's just the likelihood of it, but it could call into question how that decision was made if there is a separate process where the Secretary reports to Congress on the stock status based on a method that's set forth in the fishery management plan.

Right now, it's comparing catch to I believe the overfishing limit, and so, if catch has exceeded that limit, then the report would be that it's undergoing overfishing, and so, if you've said, well, that's not likely to happen, but then the report to Congress is that it is happening, which is a more definite thing, that could call into question the tier designation, and so we are trying to move away from something that could potentially raise questions about the designation.

Obviously, it's just a question of whether that is likely or not, but it could raise issues down the line, especially if the stock status is changing, which I understand that it can change, based on the way in which you make that report to Congress.

CARLOS FARCHETTE: I've got Blanchard, and then we've got to move forward.

TONY BLANCHARD: I've got a couple of questions and statements. I would agree with Dr. Crabtree that we need to clear up the wording as to this consensus, because, somehow, I find it a little hard to believe that there is no guidelines that the SSC has to follow to determine a decision, and it can't be a consensus. In other words, it would be like all of us sitting here at the table and we all vote and whether it's a majority that dictates the decision or it's not a majority that dictates the decision.

How it's worded there, when you sign-off on a document, it's not what you say it is, but it's how it's worded, and so we might say that this is what it is, but, when it goes in front of the judge, this ain't what you signed-off on. That's what you say that you signed-off on, but that's not what it is, and so it's what you sign-off to is what is going to hold the decision, but, how it is now -- Like I say, I find it a little hard to believe that there is no guidelines that the SSC has to follow to come to a clear decision, number one.

Number two, yes, if you find a consensus, you're going to come back to the council, and we're going to decide on it, and then you're going to take it back to the SSC, but remember the SSC is going to come up with a decision to us as to what they came up with, and now, for us to go against the SSC's decision, it's going to be very hard to change the direction, let's say, unless we have a strong argument to bring to the table.

Yes, we could go on the consensus basis thing, but, really, at the end of the day, you're going to give us a recommendation, and for us to go against that recommendation is going to be hard to go against, unless we've really got something to back it.

CARLOS FARCHETTE: Okay. Richard.

RICHARD APPELDOORN: So, how does this all work? Scalars and buffers, this is the subject of our next meeting, which will be in September, but just to reiterate what we're trying to do here. Scalars are used to adjust the catch either up or down from a baseline, and that baseline depends on the tier we're in,

that 4a or 4b assignment at the moment.

It depends on the perceived degree of exploitation, life history, and ecological function that are affecting productivity, vulnerability, and its ecological importance, and I will get into productivity-susceptibility analysis, which was a presentation that was given to the SSC as a possible way to move forward. The SSC looked at that and pretty much agreed to go with that, but made some changes, as you will see, but I'm going to present it its raw form, so I can tell you kind of how we dealt with it.

Then the buffer is reflecting scientific uncertainty, and it's based on the extent and quality of the landings and the life history information that we have.

A hypothetical example, and I think I actually showed this at the last meeting, and this is for spiny lobster in Puerto Rico. It was considered to be 4a, and so we have our year sequence here, which is 2000 to 2011, I think, and, based on that, this solid line is the 75th percentile of landings, and you will see that 2005 is not included there, because we think that there is substantial error particularly in the east coast correction factor that overemphasizes the catches of all species there, and so we've just not used it.

From there, this is our 75th percentile, and we chose, in this example, a scalar of 1.5, and so that brings us up to over 600,000 pounds, and then we chose the minimum buffer to come down to get the ABC, and so we're at about 570,000 pounds. This is the current ACL that we're operating with, and that's somewhere about 350,000, and so this is a substantial increase in what we're recommending that could be harvested from the fishery.

You can see that we did not extend the year sequence forward, because we were considering that the catches may have been affected by the ACL, and you can see also that we were going over there. Under the new scenario, we would not even be close, and so this would represent a substantial benefit to the fishery, assuming the market can take what the species can support.

MIGUEL ROLON: Richard, to most of the fishermen who ask me questions about this, right there is where people need to have a little bit more explanation. What do you mean by the 75th percentile of landings?

RICHARD APPELDOORN: The 75th percentile is -- In the reference period, and so that's these landings, these dots, up to there, you just rank them in order of landings for each year, and you find the 75th percentile, and so you start at the bottom. If you had ten years, the 75th is between year-seven and year-eight. You would go with year-eight, because that's the closest one to 75, above.

That is what we did, and so, in this particular case, we only have this year, that year, and this one is pretty much right on the line, and so this probably was the 75th percentile, this year here. These two were above, and the rest were below. Are we good with that? That's our baseline from which we then adjust the scalar.

CARLOS FARCHETTE: Marcos and then Velazquez.

MARCOS HANKE: Richard, thank you for the explanation, and I think, for the benefit of the council, examples of 10,000 pounds starting of landings, with the different scalars, keeping the buffer one number, and vice versa. Playing with those numbers as an example would be good for us to see how the system works, instead of just analyzing the -- I am following you, but I think it's just a recommendation for the council people to understand and the people to understand it as well.

I have a concern. Earlier, we were discussing the flexibility that you guys have, especially with the system that the data is very uncertain, and you have a lot of things to address, right? Once you're dealing with 10,000 or with 100,000 pounds or 500,000 pounds of fish, there is a big difference between a buffer of 0.9 and 0.99. Can you elaborate why you guys present 0.9, 0.8, and 0.7 and on that order and don't keep the flexibility of using a different number in between?

RICHARD APPELDOORN: The scientific buffer can be 0.9 or below. It can be 0.9, or it can be 0.8999, or it can be any number. They're not intervals set.

MARCOS HANKE: That's my question.

RICHARD APPELDOORN: So it's anything from 0.9. It's 0.9 because this is based on scientific uncertainty, and we have no assessments, and we have usually just landings data only and some life history information. Sometimes there are some surveys or SEDAR assessments that will say we can't tell you where the fishery should be, and so there is no MSY and telling us whether we're here or there, but they could say there is no evidence

that the fishery is being strongly impacted by it, and so sometimes we have information to go with besides just the landings, but sometimes we don't.

The degree of scientific uncertainty, just because we're at that scale without a formal assessment, can't be more than -- It can't be less than 0.9, the reduction, because that's the situation we're in. When we were adopting control rules for when we have assessments, that 0.9 level goes up to 0.95 or wherever we're at, and so remember this is a worst-case scenario, in terms of data information.

MARCOS HANKE: Thank you for the clarification, because I was confused on that dynamic, and I am very clear now. Thank you.

CARLOS FARCHETTE: Velazquez.

CARLOS VELAZQUEZ: Richard, one question. I have one question for you. I don't understand the 75 percent of the landings of all waters in Puerto Rico, and do you think, in the future, this percent is up or down for these landings of the catch, of the reports, of these lobsters?

RICHARD APPELDOORN: I am not sure that I'm understanding your question.

CARLOS VELAZQUEZ: Bill, can you help me?

BILL ARNOLD: I think he's just asking if you anticipate that the ACL will be higher, or the ABC will be higher or lower, than it is now, based upon this process.

RICHARD APPELDOORN: This is where we are now. If we accept this, this is where we would be recommending, and it would be up to the council if they want to lower it from there because of management uncertainty, and so, yes, this is not quite a doubling, but it's a very large increase in the allowable catch.

MIGUEL ROLON: This is where people get mixed up. When you say 0.9, you are 10 percent away from the OFL. Then that 75 percent -- The reason I asked you that is because that's a mathematical process where you rank all the numbers that you have. Once you get to a certain level that you trust, then you end up with the line that you have there, the red one, and the scalar -- If you are confident in the data that you have, you will be able to have a scalar higher than one. Otherwise, you will be more conservative.

What confuses many people who are asking the question is, when we say 0.9, that's 90 percent. If you take 90 percent, you are 0.1 away from the OFL.

RICHARD APPELDOORN: The important point here to remember is the ACL will then be set either at or below the ABC, depending on the buffer that the council would want to set. The ACL is what triggers -- An overage of the ACL is what is going to trigger a closure in the fishery for X amount of days, at least in the way that we're operating now.

If you go over the OFL, the fishery will be declared overfished, and a rebuilding place has to be put in place. The consequences of going over the OFL are much worse than going across the ACL, and, Bill, maybe you could comment more about that, but you don't want to be near the OFL, because bad things happen at that point, and so you want to make sure that you're buffered appropriately, protecting yourself.

BILL ARNOLD: The OFL is what Congress cares about. The ACL is what the fishermen care about. Those are the two numbers you have to keep in mind. Now, the OFL -- Given that we're talking average landings, and, of course, the landings are going to vary from year to year, it's not totally out of the question that the OFL will be exceeded. Basically, you're allowed, and, Jocelyn, correct me if I'm wrong, to exceed that OFL once every four years. If you exceed it more frequently than once every four years, then the idea is the council will reconsider their management approach to that stock or stock complex. That's what the OFL is all about.

The ACL is the thing that has the accountability measures associated with it. If you exceed the ACL, and that's not just a single year. That's an average of three years of landings. If that average of three years of landings exceeds the ACL, then we are required to apply an accountability measure. Right now, there is only one accountability measure, and that is reduce the length of the fishing season in the year following the determination, so that you allow for the ACL to be achieved, but you don't, again, exceed the ACL.

The idea is not to create any penalty or anything, but just to say, look, they can catch the ACL in 300 days instead of 365 days, and so we give them 300 days of fishing to achieve that ACL, but we're still giving the ACL. We're not taking anything away, but we're just trying to constrain catch, to make sure they don't keep exceeding the ACL. That is kind of the way it works, and I hope that helps.

CARLOS FARCHETTE: I have Blanchard and then Schuster.

TONY BLANCHARD: I need a little clarification as to what's the difference between the percentage and the percentile.

RICHARD APPELDOORN: A percentile, if I take the hypothetical situation, and let's say you have a hundred values of something, and you rank those in those values, say from -- If we're talking about catches, maybe they range from 35,000 to 62,000 or something like that, and so you're going to rank them by the order of catch. Then you would count from the bottom up to the seventy-fifth value, and that's your 75th percentile.

TONY BLANCHARD: You've got me a little confused.

RICHARD APPELDOORN: If you have ranked 100 values by those values, and you're going to start at like 30,000, 32,000, 33,000, 34,000, 34,500, and then on and on, up to say sixty-something-thousand, and so you have your 100 values ranked from your lowest to your highest. The 75th percentile of those 100 would be the 75th value up from that bottom.

TONY BLANCHARD: Okay, and so let me see if I understand what you're telling me here. If we've got let's say 100 species of fish, we will rank them from the least --

RICHARD APPELDOORN: No, not species. This is within a species, and so this is years of catch we're talking about.

TONY BLANCHARD: Years of catch?

RICHARD APPELDOORN: Yes.

TONY BLANCHARD: So what's the seventy-fifth year of catch? I don't understand.

RICHARD APPELDOORN: I was giving that as a hypothetical example, like if you had 100 years' worth of data. If you have ten years' worth of data, you're going to count up from the bottom, but you don't have a seventy-five. You have a seven and you have an eight. The seventy-five falls between the seven and the eight, and it's the eighth value that you would take. It's not the eighth year, but it's the eighth-highest value.

MARCOS HANKE: Richard, if you explain the difference for us of the percentage, that this is what all the fishermen have in mind, and the percentile, how it can vary, it's going to be more

clear, I think, for Tony, because most of us are thinking about percentage, when you divide and you have such a percentage, and it can be different, the percentile, the way you are explaining it. I got it, but that difference is what Tony needs to know.

RICHARD APPELDOORN: All right, and so a percentage would be say if you took the maximum value in that say ten-year sequence and multiplied it by 0.75. That would be the seventy-fifth percentage point. That would be 75 percent of that maximum value. That's kind of the standard way you do percentage. It's like our buffer is 90 percent of the OFL. If we take a 0.9, we're saying we're taking 90 percent of that OFL to get the ABC. We're taking that OFL and multiplying it by 0.9. That gives us the 90 percent level of that, and so that's on some single value.

A percentile is not based on a single value. It's based on a ranking of values, and so your 50th percentile is that middle value, whatever it is, and your 33 percent percentile is you are one-third up. 67 percent would be two-thirds up, and so 75 percent is three-quarters of the way up that list. If there is not a value at that three-quarters, you go to the next-highest value.

CARLOS FARCHETTE: I have Jocelyn and then Schuster.

RICHARD APPELDOORN: I can sit down with you and actually work out an example, if you like.

JOCELYN D'AMBROSIO: There are just some points that were made that I wanted to make sure that we clarified. In terms of the OFL, right now, the fishery management plans talk about overfishing as catch exceeding the overfishing limit, and so that would be the consequence in a report to Congress that if catch was above that overfishing limit that it would be -- Overfishing would be occurring.

Then Bill mentioned a performance standard. Under the National Standard Guidelines, if catch exceeds the ACL more than once every four years, then the system of ACLs would need to be reevaluated. That's a recommendation in the guidelines, to reevaluate, and that is keyed to exceeding the ACL, which, of course, is based on this process we're talking about.

CARLOS FARCHETTE: Schuster.

EDWARD SCHUSTER: I attended all of these SSC meetings, along with Julian and Nelson Crespo, and I am hearing some new

language here that we asked the question about, which was brought up by Dr. Roy Crabtree, and not having a stock assessment and then it goes to National Marine Fisheries to determine if the stock has been overfished, I have a problem with that, because we mentioned that our fishery is market driven, and my concern also is you look at graphs. If the fish stock or the graph is declining, it does not necessarily mean that the stock is declining.

It means that you're not targeting the species to sell it. I mean, why catch it and you can't sell it, and so, again, it comes into what was mentioned here. If you exceed the ACL, or you even go over the OFL, because of better reporting and the CCRs, which are your commercial catch reports, have been modified, with discrepancies of names, common names, that fishers might have been confusing, and, again, then an AM is implemented and the fishers are penalized.

I mean, can we look at something, but then, just hearing legal counsel, looking back at the National Standards here, we need to clarify these issues that we have.

CARLOS FARCHETTE: Roy and then Marcos.

ROY CRABTREE: Coming to Schuster, yes, we can look at that. The SSC can, and I'm sure would, look at that. If we see a decline in catches, why is that happening? You're right if people can't sell them that they would stop fishing for them, and the catches would be expected to decline. If that's the case, that doesn't mean the stock is declining, but it's possible the stock is declining. You can't rule out that that could happen.

Those are things that the council and the SSC would look at and could look at, and you brought up the reporting issue, and we have that built into our accountability mechanisms now, that if we see catches go up, but we believe it's because of improved reporting, then we don't execute an accountability mechanism, because we don't want to penalize fishermen because they are doing the right thing, and better reporting is not a reason to restrict the fishery. In fact, better reporting potentially means we know better what's going on and could allow more fishing.

I don't really have a problem with the 0.9 buffer. It seems to me that, to get the ABC much closer to the OFL, you would have to argue that there is very, very little scientific uncertainty here, and I don't think any of us sitting at this table believe

that. There is a lot of scientific uncertainty here. That's just the reality of the situation.

Even in cases where we have pretty good stock assessments, generally you're not going to get closer than that to the OFL, even in that situation, and so that doesn't bother me. I know a lot of this is complicated, but the bottom line here is, in this example, the fishermen are going to catch a lot more lobster, and we're not going to have the closures that we've been having in Puerto Rico once we get this done.

Now, I think that -- I like the fact that the SSC operates as a consensus body. I think that's appropriate and how it should be. I do want to spend a little more time talking with folks about the exact language in the ABC control rule and whether we need to tweak that a little bit, but I think we're getting real close to where we need to be with this.

I think, for a lot of stocks, it's going to be a good thing, and it's going to allow more harvest, and probably the toughest closure we've dealt with down here has been spiny lobster in Puerto Rico, and I think this addresses that one pretty well, and so I am pretty comfortable with where we are, but I do think a little more discussion with the attorneys about whether we need to refine what consensus means and, if the SSC can't reach a consensus, it does seem to me there's a role then that the council needs to play a role in deciding what to do with it, and maybe we can come up with some language that would address that to you guys' satisfaction a little more, but I think, Richard, you guys have done a good job, and we're getting real close to where we need to be.

CARLOS FARCHETTE: Marcos.

MARCOS HANKE: My question is for Richard, but I need to make a comment to Roy. I think something that should be explored in looking for that language and clarification of the whole process, when that information comes from the SSC to us, is on the moments that you guys don't have consensus, that we have that problematic situation of scientific interpretation or opinions on your part, and let's say the Chairman -- You present later that the Chairman will be the one that will evaluate the merits, or whoever is going to evaluate the merits, of the scientific arguments or reasons to go one way or the other.

I see a better scenario if, once you get to that moment, the vote, whatever structure of vote that you guys decide to take, should come here with the rationale for that vote for the people

that don't agree, and we should have access to that scientific argument and not an opinion and not something that lies on your back, because I don't think it's fair to you, something unwritten.

If I am going to vote on the SSC against this decision, because I don't agree, it has to be written, and we need to have access to that, because it's something more transparent and more clear, and we're going to make a better decision, and that's one. That is just a comment as something that should be done.

About the scalar of two, I don't want to get too complicated on this, but this is a question that I have all the time. Why the scalar of two and not a scalar of ten or a scalar of three or a scalar of whatever? Why the top on that scalar is two? That's one question that I need to be able to clarify to people that ask me, why it is two.

Going back to the point that Ed made, in Puerto Rico, on the local market, it's consumed by local people, obviously, and we have less than 500,000 people that are not in Puerto Rico living anymore, and that should be taken in consideration of the future numbers that are coming, because I know restaurant owners that are selling less fish or buying different fishes that are less costly to them, and all of that dynamic of marketing is taking place, and, once you see the numbers, that will reflect a big change on the numbers. Just be mindful of that.

Now it's an invitation, and I am touching many bases at the same time. It's an invitation to the fishermen to understand this. We are discussing this uncertainty because we just have landings numbers, and, throughout the history of different efforts to collect better data, there is sometimes, the way I see it is for no reason, resistance to collect biological parameters from the landings, from the catches, better data, that will give more power and better decision baselines to us.

This is an invitation for the fishing community to promote and to do a better job on not just having landings, but having other parameters that reflect the reality of the fishing, like the size and different other things. Thank you.

RICHARD APPELDOORN: This is why it's exceedingly valuable, necessary, to have the advisory panels feeding in their knowledge base and what's happening in the fisheries to their Chairs and those Chairs bringing that to the meetings, and so this has happened historically, since we've been into this ACL issue over ten years now, or however long it's been, eight

years, these issues about what is controlling the sizes that are being landed, in terms of the market structures, what's controlling the species and what's controlling the amounts of those things.

If those don't come back to us, we're going to interpret that data wrong, and so that's why it's so valuable to have those people there to let us know exactly what's going on and what's happening in the markets, et cetera, so we can interpret that data.

The reason for making two the limit is partly theoretical and partly practical. The practical side is that we were basing our approach to the control rule on the experiences of the other councils and their experience if they have had assessments done on species. Two seems to be where they're drawing the line.

Just on the kind of more theoretical side, it's one thing to say I don't think we're overfishing here, but it's very much another thing to say where should the limit be, and we don't know what those limits should be. We don't have assessments, and so two seems to be what we would say is a good starting point. If we find, over the coming years, that we're wrong, we can change the control rule. There is nothing that stops us from doing that, but, at the moment, that seems to be a good place to be.

If we get in a bind, and this is theoretically possible. Let's say fishing is so bad, from a market point of view, that no one is going to fish, and our recent data is just so depressed that even getting two above the 75th percentile is not going to get us to where we actually think the fishery could be, based on say past landings, that may be something we'll have to revisit, but the market structure isn't likely to change overnight that this would cause an immediate problem. If the market structure starts changing and we find out this has been going on, we'll have to revisit it, and so nothing is fixed in stone here. That goes to the last point that I will make in the presentation.

MARCOS HANKE: I have the list that Carlos started, and I just have the Chairman position now for a little while. Damaris.

DAMARIS DELGADO: I just wanted to share with you that I agree with what Marcos was explaining. I kind of understand what Richard said, but I'm still a little bit confused about how we integrate socioeconomic factors into these formulas. I think what we are going through in Puerto Rico, in terms of our economy, should be reflected a little bit more in these concepts.

RICHARD APPELDOORN: That's the point I'm making. We have landings data for a lot of these species and nothing more, and so, if the landings are going down not because the fishery is being overfished, but because people are stopping fishing, we need that input, and then we will take that into account, in terms of -- If we think the market is depressing the fishing, then we'll say, okay, here is our baseline, but our scalar is going to be much higher, because we know that's not a depression due to fishing. That's a depression due to market structure.

DAMARIS DELGADO: Right. Thank you.

MIGUEL ROLON: Let's make it very clear that the law says that we manage for biology first and socioeconomics second, and so the only -- But that doesn't mean that we do not include it. Actually, sometimes, the socioeconomics is more important, especially if you don't have the data, but anything regarding what you just said has to be demonstrated and proven. If we have information that says the fishery is not at the level it should be because people are not buying fish, you have to prove that, and you have to have the documents that the SSC can use.

DAMARIS DELGADO: So how can we prove that? I mean, going in that direction, I understand what you're saying, but do we have like economists on our team that could help us with that?

MIGUEL ROLON: Yes, we have an economist on our staff.

RICHARD APPELDOORN: Also the SSC.

MIGUEL ROLON: The SSC, and you have Walter Keithly, and those concepts are thoroughly discussed at the SSC, and, actually, one of the reasons why we have three Chairs of our District Advisory Panels attending these meetings is precisely because the scientists have been asking us the input of the industry, so we will have checks and balances, because sometimes the information that you have is not -- It is reflecting the way that you collect the information, but it's not the real what is happening out there, and so that's why these three gentlemen provide the input that the SSC needs, but we have to be very careful not to say that the council decided to do this and that because Puerto Rico is in bad shape.

RICHARD APPELDOORN: To give you a hypothetical situation that would go the other way, historically, if you go back to the last century, fishing was an outlet for people who had no other employment, and, therefore, if the economy started to get

depressed, more people went fishing, and so it's just got the opposite effect of what we're seeing now.

We do need that economic input, in whatever form we can get it, and sometimes it's as imprecise as our landings data, but it's what we work with, and so, to the degree that the economic data is there -- In the last meeting, we were calling it up on the web, of here is the reports on what is happening in Puerto Rico, and it's valuable input. It's necessary input into the decisions that we're required to make.

DAMARIS DELGADO: Thank you.

MARCOS HANKE: Julian.

JULIAN MAGRAS: I have a lot of concerns about the whole entire process, and I have been following it, and I think I'm well-educated on this entire process, from the beginning to where we are at right now, and we always show a great example, like the lobsters up here, but what all of us in this room need to understand is we have lobster fishermen, and we have trap fishermen, and we have line fishermen, and we have seine fishermen, and so everybody doesn't target lobster.

We might say, oh, look, you're getting a great increase with the lobster fishery, because those numbers have been excellent over the years, but when it comes down to the trap fishers, where the numbers are lower, because their market is totally different than the lobster market, where the locals are the ones who are buying those species of fish, and our landings, over the past few years, are low.

They're low because of the economy, and they're low because of different things that are taking place with the restaurants being closed. They're low because some of the fishermen have dropped out of the fishery. The weather and the tides this year have been unbelievably strong, and fishing has been really reduced and a sorting of the sectors.

At the last council meeting, we had the discussion about doing a socioeconomic study for the USVI, and it never left the ground. Here it is that we are over here, and we haven't heard one word since that last meeting, and, every time we mention something at a meeting of the SSC, or in other meetings, we need to have a written document showing what is actually taking place in these industries and why the fishermen are saying so, but the fishermen's word can be held how it needs to be held.

The year sequences that were chosen by the SSC members at the last meeting were the year sequences where our numbers are the lowest. They are the lowest, and I have a problem with that. Sure, lobster numbers are going to be high, but, when we come to the rest of the species, even though all of those species fall into the 4a category, except for one of the grouper units, by the time the scalars and buffers are put in place, it might bring us back to where the original ACL is set right now, and so that's not leaving any room for that market to increase.

What it's doing is it's keeping us right to a spot where the chances of us overrunning that ACL has increased, and this is where we talk about the DAP's input. The DAP for St. Thomas/St. John requested that we use the same year sequence of the setting of the original annual catch limits until there is enough data collected with the new data reporting CCR forms that have just been put in place, for a little over six months, to capture every species that's going to be in the new island-based management plans, and that was ignored.

We moved and we picked a year sequence where -- It's across the board, like Mr. Blanchard said earlier, and his question to legal counsel was can we use different year sequences for different stocks, and, yes, we can, but it was chosen and voted on by the SSC that we stick across the board with the same year sequence, and I have a problem with that.

I think, as we move forward, we need to look at this process more openly, and, when we show more examples -- We need to show examples for the different islands, and we need to also show other stocks besides the lobsters, and we need to show -- Let's show some parrotfish, and let's show some surgeonfish, and let's show the year sequence that was chosen, and let's see where those numbers as examples might end up. Thank you.

MARCOS HANKE: Thank you, Julian. One last question from Kate.

KATE QUIGLEY: I am the economist on the council staff, for those who don't know, and just, in response to Julian's concerns and the AP Chair's concerns regarding the economics and getting some of that information to the SSC, there was a discussion, and not at this past SSC meeting, but the one before that, about getting some information out there to the scientists about what's going on on the islands and why fish might not be being brought in for economic reasons, and, therefore, landings are lower, and landings don't necessarily reflect what's out there, but can reflect economic situations and prices being offered and what can actually be sold on the market.

Since that SSC meeting that we had and there were discussions, the plan was to bring back not a survey, but questions, using St. Thomas as the first -- USVI or St. Thomas as the first case study, but it was for me to go out and chat with restaurant owners and with others, fishermen, and talk with them about what are the reasons that you might not purchase fish or that you might not be delivering fish on the same level that you were in previous years and questions of that sort.

The idea was for me to come back to this council meeting with some sort of survey questions, and so I have spent the last two-and-a-half or three months talking with the Science Center, the economists there, the social scientists there, and working on the methodology that would be used, because we decided that a survey is probably not appropriate and a focus group is probably not appropriate, and so we had to come up with some other methodology and come up with questions that might be asked.

I have a survey that I plan to share at this council meeting privately with the USVI folks, to get their input on what is appropriate to ask, and so that is being worked on. It's not that it hasn't been worked on at all, but it has not been shared, because I've been going through discussions with the Science Center, but I am ready to share that privately and vet that through the USVI folks, and the plan was to get started on that sometime in December, prior to the December council meeting.

MARCOS HANKE: Very quick, and then we have to end this to go to the next topic please, but go ahead, Tony.

TONY BLANCHARD: I think a motion needs to be made that Kate needs to present this information to the SSC meeting.

MIGUEL ROLON: You don't need a motion for that. Once she finishes, it will be presented to the SSC.

MARCOS HANKE: We need to move on, because we have a very tight agenda. Miguel, we can go with the next item.

MIGUEL ROLON: We need to finish what Richard has to say.

RICHARD APPELDOORN: This is just a hypothetical example. It's the only one we've worked up where we talked about scalars and buffers for a situation where we were confident that it would be a Tier 4a, and this is the opposite. This was actually somewhat constrained, and it actually has the situation that I think

Julian was talking about, and this was constrained to be a 4b, and this is commercial and recreational data from Grouper Unit 4.

It's mostly yellowfin grouper, and you can see we have this one year which is double everything -- It's up here someplace. This is because we're using recreational data, largely, in addition to the commercial data, and the recreational data tends to be highly variable from year to year for species that show up rarely in those surveys, and that's why it bumps up and down a lot, and this is one of the things that percentiles help with.

In this case that we're looking at a Tier 4b, and so we have our year sequence, and you can see 2005, again, was dropped out, and we have the average landings during that sequence. We took the OFL to be 0.95 of that and that ABC at 0.9 of that. The reason is because you see this big decline here, and that decline is due, we feel, largely to the protections that particularly the Department of Natural and Environmental Resources put in on closing the spawning seasons for particularly yellowfin, or yellowmouth, rather.

As a consequence, those catches have declined dramatically, and not because the fishery is overfished, but in fact because it's more protected, and that's why I said this is a constrained value, and so we might come back in the future and say, wait a minute, this probably still is a 4a or something like that and we want to modify it, but, right now, we wanted to have some example of 4b, and this was actually something that was done several meetings ago, and so, as I said, it's a constrained value that we did for a hypothetical, to show you how things would work.

We would start off with the average, and the average does include that value, and then we come down, because our starting point is the average to an OFL, and from that to the ABC. Even though there is a lot of scientific uncertainty here, we're pretty certain that that decline is not due to overfishing. It's due actually to protection, and so, again, it's a hypothetical thing, just to show you what would happen in the 4b.

There were talks about the year sequences, and the exceptions are listed up on top, because all the other species in Puerto Rico are 1998 to 2011, excluding that 2005 that we think is aberrantly high. Dolphinfish goes to 2015. The cutoff here in 2011 is because that's when ACLs went into place, and so, if we were concerned that landings were being affected by ACLs, we

didn't want to include those into what the potential could be. Dolphinfish have not been on the plan yet, and so we're using the data all the way into 2015.

Wahoo is also from 2010 to 2015, because that's mostly where the best available data is for that. It was a developing fishery, and the data indicated that it was a developing fishery before 2010, and so we didn't use the data before that.

Barracuda, you can see here it's 2008 to 2014, and then there's some management that goes into effect, and that affects their landings as well. King and cero mackerel and little tunny and blackfin tuna are 1999 to 2015, and this is because that's when the recreational surveys started, and that's when we have data available. As I said, everything else for Puerto Rico is using this structure.

Yes, we did, as an initial step, and I say initial step, but we took the most recent data for all the species coming out of St. Thomas and St. John, because that's where we had the species-specific data. We don't have that before, and we are well aware that those landings are depressed because of market issues, and we have not gotten to the point of discussing scalars and buffers for those situations, but that is what we'll be doing in our meeting in September, and so I hope to be coming back at the next meeting and telling you how that resulted, and hopefully we have treated those in a fair and equitable manner, but it hasn't been addressed yet.

CARLOS FARCHETTE: Richard, Nelson has a question.

NELSON CRESPO: Can you go back to the Grouper Unit 4 slide? This is an example of how the market works. I guarantee you that those landings reports declined because, for past years, we have a problem with the basa. The basa is a type of fish that most of the restaurants are using now and selling, and the cheap restaurants prefer to pay two-dollars for the basa instead of five-dollars for the grouper, and that's maybe one of the reasons that those landings appear here, and I can guarantee you that fishery is totally healthy.

RICHARD APPELDOORN: Yes, and I am not disagreeing with you. In fact, you can buy basa for $1.60 a pound in Sam's, fillets.

MIGUEL ROLON: Just to clarify, basa is a catfish from Asia that has been sold in Puerto Rico by the tons, and what is happening is that some restaurants, and not all of them, go buy basa and they sell it for snapper, and so the consumer cannot tell them

apart. Rather than paying five-dollars a pound, you pay one-dollar a pound and then the meat in indistinguishable. That may have an impact on what you have here.

RICHARD APPELDOORN: If you don't know, it may be indistinguishable, but, if you know, it's clearly not. I am not saying -- Basa is a nice fish, but it's just not grouper.

MIGUEL ROLON: Yes, but the thing is -- I was with some friends the other day, and I asked them whether they knew what they were eating, and all of them knew what the hell they were eating. It was just fish.

RICHARD APPELDOORN: I did that at the restaurant here last night, because they had grouper on the menu.

MIGUEL ROLON: It wasn't basa?

RICHARD APPELDOORN: No, it was grouper, and they eventually found out that it was gag coming in from Florida.

CEDRIC TAQUIN: I'm Cedric Taquin, and I'm a DAP member and a chef, restauranteur, and fisherman, for the record. I just want to add that, actually, even fish suppliers have the section of grouper that says "grouper" and "swai/basa/Pangasius" are one of the options, and so, when you actually see like -- If you go to somebody who doesn't have fishing knowledge, or doesn't live close to the coast, and they bring you a list that says grouper, and you've got the eighteen-dollar-a-pound or fifteen-dollar-a-pound, and then, all of a sudden, you have the dollar-fifty-a-pound grouper, and they're like this is the best, and this is the grouper that is selling and everybody is buying it and it's your best option, at that point, you realize that there is so much misinformation now.

How can restauranteurs or chefs that don't know much about the ocean -- They don't even know what they're buying, and that's what they're serving, and so I'm sure that many of them are doing it on purpose and they know exactly what's going on, that they're buying a fish and selling it as another one, but I see a lot of people that don't even know what they're buying, because they are getting offered this basa.

I just wanted to add that, and I agree with Nelson that that is one of the reasons why grouper isn't selling as much as it used to, because you have this beautiful, white fish that's already perfectly -- It looks like the sole of a shoe, and you don't have to do anything to it, and it costs a dollar-fifty-a-pound

at Sam's, and so that's it. Thank you.

MIGUEL ROLON: Mr. Chairman, I recommend to allow Richard to finish, because we have the report from the DAP groups. Richard, do you still have a lot to say?

RICHARD APPELDOORN: A few things, yes. We spent a lot of time on the productivity-susceptibility analysis, and this is something that was brought to the committee from the Southeast Fisheries Science Center, and the basis of this is this publication here.

I would point out that Todd Gedamke is one of the authors of this publication, and he's also one of the members of the SSC, and so we do have the expertise in this area on the committee, and what this is doing is looking at these factors to look at the question of vulnerability, and so the vulnerability of a stock to becoming overfished is defined in National Standard 1 as a function of its productivity, the capacity of the stock to produce MSY and to recover if the population is depleted, and its susceptibility to the fishery, the potential for the stock to be impacted by the fishery, which includes direct captures as well as indirect impacts to the fishery, such as potential habitat damage or whatever else you could think of, if we had a trawl fishery or something like that.

I know you're not going to be able to read these things. The next slide is actually even worse, but we look at two things, productivity and susceptibility, and so these are the formal productivity attributes coming down here that are mentioned in that document. There is a lot of them that -- There is twelve of them there, if I'm counting correctly, and they are -- Some of them are highly correlated, but not perfectly, and so, the more you have, the better you can assess what the productivity potential might be.

Some of these are things that are intuitive, in the sense that we have a growth rate here. If your growth rate is low, you are not very productive. It takes you a long time to get to a size. If you have a very long longevity, if you live a long time, your natural mortality rate is going to be low. Otherwise, you wouldn't live that long, and so there is a lot of correlation in these things, and it's looking for lots of things.

For most of the species that we have here, we don't have half of those things, and the process is designed to go with whatever you have, and so, if you only have five of the variables, you go with five of them. If you have all twelve, you go with them.

If you have three, you will be going with those.

Because there is a lot of correlation in those variables, you start building up your picture of the productivity fairly quickly. It's like an exponential rise, and then it would gradually come off. It's still increasing as you got all those other parameters into place, and so you don't need a lot to get a good idea of kind of where the stock stands. You need a lot if you really want to peg it at some absolute level.

The values for these are ranked on a scale of one to three, high, medium, and low. There is a potential for weighting here. The defaults are two, and the committee went through an exercise to do this. They just came up with the values as they were brought to the committee by the Science Center, and this was, again, an exercise that they underwent.

We were facing a particular question, and that is do we want the Science Center to go through a formal PSA analysis for all of the stocks, which would take until sometime in the spring of next year, do we not want to incorporate this information at all, or someplace in between?

What the committee decided was, and this was based on a fair amount of experience on the committee, particularly with these issues, and with the fishermen on some of these, and certainly with the susceptibility criteria, which I'm going to show in the next slide, with the understanding that going through a very detailed analysis probably isn't going to get you anything much different than a fairly quick-and-rough analysis would, again because of the strong correlations between these values.

The committee went through an exercise to rank the species or species groups in terms of their productivity and susceptibility and to quickly give them a high, medium, or low score, because, once you're doing that kind of ranking into one of three things, the nuances between 0.3 and 0.4 don't make a difference if your cutoff is 0.7 to 0.2, and so that was their rationale for going through this.

Let me just present the susceptibility attributes, and I know you can't read that, but I will read them. There is the management strategy, is there a management strategy, and is there areal overlap between where the fishery occurs and the stock occurs? Is there a geographic concentration that would have the fishery concentrated on where the stock is relative to its whole distribution? Is there vertical overlap? Does the fishery operate here, but the species operates at this depth,

and so there's a protection with depth, or the other way around? Is the fishing rate relative to natural mortality? That's one of the things we don't know.

The biomass of spawners, we pretty much don't know that. Seasonal migrations that might affect and make things more or less susceptible to overfishing. Schooling and aggregations, spawners that form big aggregations become more susceptible in this criteria. Is there morphology affecting capture? Is there something, because of its morphology, like can be caught in a net easier than another species, for example?

The survival after capture and release is something -- Deepwater species, as you bring it up, it's going to die if you throw it back, and so do you have regulations that are based on size, and maybe that's not a good idea, but you're going to lose these things, and so what is the susceptibility of those things?

Desirability in the fishery, is it something that, regardless of what the price structure is, people are going to buy it, and so fishermen are going to continue to go after it? The fishery impact to EFH, I don't think that's a strong issue here. We're not doing dynamite fishing, but it's one of the factors that we looked at, and so these were all looked at, to the degree that we could find information on species.

I know you can't read this probably either, but, if you look at susceptibility and productivity and add their scores -- They were done such that, if you are low production or you are highly susceptible, you got a low score. If you are high production and low susceptibility, you got a high score, and so, as these numbers -- As they go up across the scale, then you can see these are very highly productive and less susceptible species, and these are low production and more susceptible species.

That is not surprising that it's led off by Nassau and goliath grouper. Both are closed to fishing in our area. Stingrays where there and cucumbers, sea cucumbers. Some of the larger groupers are in here, but then, out here, you're getting a lot of your pelagics, little tunny and blackfin and pompano dolphin and dolphin and some of those others that I can't read, but these are the scores that came out of that analysis.

It was done fairly quickly, and so it's considered tentative, but the committee feels that it's probably going to be useful, not as a determining factor in how we would either allocate something to a tier or how we would generate the scalars and buffers for that, but it is one factor that we would consider in

doing those things, and so, something that is viewed as not very threatened and highly productive, we would be more likely to put a high scalar to that then we would for something that is not very productive, but we're not drawing a line that says if the score is this that it's that. It's just one of the factors that we consider.

Obviously we take into consideration the state of the fisheries themselves in the ways that we've talked about, for example in terms of the economic situations on the islands, all of which are different.

Then there were tier assignments, and what I'm showing you -- If it's not on the slide, it's a Tier 4a, because most things are in Tier 4a. For Puerto Rico, it's Nassau and goliath grouper, because they're already closed. The yellowfin, blackfin, red, and tiger are all Grouper Unit 4, which that unit has already been expressed as being overfished, and so they were put into that for the moment, just because that's what their status is at that moment, and we all recognize the arguments that Nelson made, for example, relative to yellowfin, that that may not be the case here, and so I'm saying that all of this is still tentative.

The big parrotfish are closed, and then they are the ones that we have concerns about, because they're low productivity, manta ray and all of the rays here. Queen conch is closed in the EEZ in both Puerto Rico and St. Thomas, and the cucumbers and urchins were also put there because -- I was not here for that discussion, but my understanding is that they would like to set the ACLs at zero for those.

CARLOS FARCHETTE: Roy.

ROY CRABTREE: Richard, something that kind of jumped out at me is, by going to 4b, we're saying we think it's likely that overfishing is occurring, yet a lot of these fisheries are closed. If the fishery is closed, why do we -- Are you saying because we think there's poor compliance, or why would we think that overfishing is occurring if it's closed?

RICHARD APPELDOORN: We were going with they were closed because it was thought that overfishing was going on, and so we were reversing that argument, if you will. There is no assessment, remember?

ROY CRABTREE: I get that. We think overfishing was occurring, and so we closed it to end the overfishing, because it's almost

like we have to keep saying that overfishing is still occurring to justify the closure, which seems to me that, if we think the closure is working -- You get my point. I'm not sure what to do about it.

RICHARD APPELDOORN: Nor am I, but we're well aware of that inconsistency, and, as we're going to address the wording for Tier 4, we'll come back to that and try to see what we want to do, because we could say, okay, it's not overfished, but we're still recommending -- It's not undergoing overfishing, but we're still recommending a closure, because of an overfished determination that was made in the past.

ROY CRABTREE: I think that would be worth looking at. Then some of these, like the manta rays, it seems to me that I once looked, and I had a hard time finding even a record of a manta ray, more than one or two, coming in over a bunch of years, and so, while I can understand wanting to close manta rays down, just because they're big, neat animals with no real market value and we don't think people ought to land them, I hate to see that get translated into we think we're overfishing.

RICHARD APPELDOORN: Right, and I agree with those concerns. I was not there for the discussion of those, and so I'm relying on the notes that were provided to me and discussions with people, and perhaps when Todd gets here we can clarify that a little bit more, but, yes, it definitely was linked to the fact that these things were either closed or felt to have such low productivity that they should be closed.

ROY CRABTREE: I think you could say that we think there was chronic overfishing for a long period of time that depleted the stock, and so the fishery was closed, and that we now think that overfishing is not occurring, but we think the stock is not at a level where it could sustain a harvest and it ought to remain closed, something like that maybe.

RICHARD APPELDOORN: Yes, we could say 4a and we just set the scalar at a negative, for example.

ROY CRABTREE: Yes, that might be more -- Then I think some of these, like manta rays, it's just that we don't see any reason for people to land them and so we're not going to -- I don't know. Maybe there is some things that you don't want to have a fishery for, because there is some --

MIGUEL ROLON: May I add a question also to Jocelyn, so you can address both? One of the problems we have with all these

fishery issues is that you are supposed to prepare a management plan for the entire range of the species, yet your management measures is only for the federal zone until such a time that you have compatible regulations.

In the case of the queen conch, and I'm not talking about the other ones, but, in the case of the queen conch, the reason why it's closed is because Puerto Rico never had compatible regulations with the federal government that required them to bring the animal intact to the shore, et cetera, et cetera. I guess we are mixing the two concepts, and so how can we clear this up in a way that it will be clear for everybody?

JOCELYN D'AMBROSIO: I think a lot of this discussion is getting at some of the discussion that's been going on with the SSC about clarifying the different ways in which you put in the tier assignments. Right now, what the language talks about is the likely or unlikely subject to overfishing, and we're sort of discussing how that might relate to the fact that there's a report to Congress on that status and how the results of the report might influence or potentially could require reevaluation of the decision about whether it was likely or unlikely to be subject to overfishing.

The SSC also looked at the vulnerability of the stock to fishing pressure, and so a lot of what they were doing was going through the factors that Rich presented on and figuring out is the fishery going to be vulnerable to fishing pressure, looking at the life history characteristics and the amount of fishing pressure that is existing, and so they actually sorted based on those vulnerabilities.

In 4b, it's not necessarily that they thought it was likely to be subject to overfishing. Right now, it's sort of a tentative placement where they think it might be on the more vulnerable side to fishing pressure, so that that would require additional protective measures, but I think Roy's point is well taken that we need to make sure that we're clear on what those factors are and clear that there's a reasonable basis for sorting into the different categories and that what you do with the stock based on how you've sorted them, whether it's that they're vulnerable or based on your understanding of whether they are likely or not likely to be subject to overfishing, plays into the different inputs to the control rule, and that is still a process that is ongoing.

CARLOS FARCHETTE: Roy and then Blanchard.

ROY CRABTREE: Yes, and those are good comments, and I raise it because it's important, in terms of when we report on the status report to Congress and list stocks as undergoing overfishing. There are people around who kind of look at that as a council scorecard, and, if we have closed fisheries and we're pretty sure we've ended the overfishing, I want to make sure that those fisheries are not listed as undergoing overfishing in the report, because I don't want people looking at the Caribbean and saying, look at all these stocks undergoing overfishing, when we really don't think they are.

That's why it's important that we figure out exactly how we're going to deal with 4a and 4b and how it relates to the status determination, because it gets translated into something that affects people's impression, in Congress and other places, about how we're doing down here, and we want to get credit for it. It doesn't mean that we need to open the fishery back up, because I think a lot of those fisheries are closed with good reason.

Nassau grouper is listed under the Endangered Species Act now, but I just think that we need to be very careful and think thoroughly through the legal implications and how this is going to translate into the status of stocks report.

CARLOS FARCHETTE: Blanchard, and then I have to move forward.

TONY BLANCHARD: I would have to agree with Roy. Now, he used the example of the Nassau grouper, and he basically said it was endangered, but, just to prove his point, we've got a Nassau grouper fishery that's been closed down for years now, and the same thing with the hind, and I will bring up the Hind Bank again, because this is let's say a bad spot for me. This is like an itch that you're constantly itching at, where we suffered a shortened season years back, a few years back, yet the information coming out of the Hind Bank shows that the hind has increased in size and in numbers, drastically, from Mr. Rick Nemeth.

Now, people have a tendency, instead of going against the grain, to go business as usual, and so we keep kicking the can down the road, like Roy stated, in a different manner, but that's basically what we're doing, is kicking the can down the road, because it's the easiest thing to do.

Now, in order to change the outlook on the fishery, we need a stock assessment, and the reality of it is -- Basically, it was a bait fish in this big pan, waiting for our stock assessment, and so I really don't know how we're going to increase it. I

agree with Roy that we need to look at these things differently, because we can't say that a species has been placed on a list. We ain't looked at it for twenty years, and we've still got it on the same list.

Once again, I'm going to have to vote in Roy's corner. He placed it in a different wording, but that's basically what we need to do. We need to stop kicking the can down the road and hope that somebody else is going to pick it up and dump it in the garbage, or we need to step up and say, well, listen, we really need to address this and place it where it needs to be placed, instead of just business as usual.

RICHARD APPELDOORN: The species lists for St. Croix and St. Thomas are -- It's lower, but fairly similar. It's basically lower because some of those species aren't on their list of species to be managed, but it's Nassau and goliath grouper, Grouper Unit 4, the big parrotfish, queen conch, cucumbers, and urchins. That is actually St. Thomas and St. Croix. They are exactly the same.

This is the last slide. Comments and recommendations, all the designations that we have done so far, tiers and the PSA scores, et cetera, are preliminary and could be revisited, and certainly we've had some discussion here about some points that need to be brought up in that light.

We are requesting that the Science Center review and comment on the PSA scoring and the scores that were used by the SSC, and so those scores were all done for each species or species group given the information, and that's all documented in a very large table that I cannot possibly show here, but the rationale for those scores is in there, but we would like that to be reviewed by the Science Center.

We may actually request scientific information to be provided on selected species that we found particularly most difficult, and by we, I mean not me, because I was not there. That list then is to be determined, and so I have not been given that list.

There was also a request by the Science Center to get some input to finalize the data-limited approach that was being used for SEDAR 46, and so, at this point anyway, the SSC was recommending that the year sequences that we had agreed on, as I showed above, could be the starting point for those analyses, and I think it's yellowtail snapper is the species of interest at the moment in that data-limited, and that's it.

CARLOS FARCHETTE: Okay. Graciela.

MIGUEL ROLON: What we are going to do now is to hear from Graciela a summary of the recommendations from the three District Advisory Panels of Puerto Rico, St. Croix, and St. Thomas/St. John. Our suggestion is to allow Graciela to finish the presentation, and we will do it one at a time. We are going to discuss St. Croix now, and probably it will take the half-hour that we have until lunch. Then, after lunch, we will continue with the other two.

What we would like to do here is to allow Graciela to finish. Then the Chair of St. Croix can answer some of the questions that you may have to clarify the rationale behind the table that is going to be presented by Graciela.

What we asked the three District Advisory Panels was to consider what they know about the fishery and to recommend to the council the percentage of the buffer between the ABC and the ACL, and that is what you are going to hear from Graciela now. The meeting took place on the 6th of July, and the three Chairs are here, and so we will go with the first one to lunch, and then we will come back with the other two.

CARLOS FARCHETTE: Before Graciela starts, I want to thank Richard for his report, and I forgot to do that. Thanks a lot, Richard. Graciela.

DISTRICT ADVISORY PANEL MEETING RECOMMENDATIONS
ST. CROIX DAP RECOMMENDATIONS

GRACIELA GARCIA-MOLINER: You should have received a copy of the tables that we sent around regarding the comments sent to the council by the DAPs. The main question was, without knowing what the ABC given by the SSC to the council is, what would be your recommendation to reduce the ABC to the ACL, based on the knowledge that you have of your fishery?

There were a number of questions given to them for guidance, such as, for example, is the amount of fish that you are harvesting the same as when you first started, are the fish larger or smaller, are female fish showing up in small sizes with eggs, et cetera, and so things that they would notice throughout their ten or fifteen or twenty or thirty or forty-year long careers in fishing.

Each of the DAPs did it a little bit differently, but the idea was that they would go over the groupings that have already been

formed by the recommendation of the DAPs and the SSC and give you rationale why they think that the ACL should be the same as the ACL, if the ABC should be reduced by any amount, and what that amount would be, and so the Excel file that you received would have the family name, the scientific name, the common name used in English, and, in some cases during the DAP discussion, the common names in Spanish were used.

If the species are not considered for management, and we have kept all the species on the same list for all of the three islands, and then the rationale of why they think that the reduction should be more or less.

For example, this is the way that it worked out. For the snapper unit that consists of the black snapper, the blackfin, the silk, and the vermilion in St. Croix, and these units might not be the same for each island, what would be the percentage reduction from the ABC, and, again, not knowing what it is, that you would recommend the council use to get you to the ACL and why.

In this case, for those four species of snappers, they recommend that there will be a reduction from the ABC to the ACL of 10 percent, and the rationale for that is because there is already a seasonal closure in place, and, in St. Croix, it's only in the federal waters. Although the fishery status is unknown, it's an oceanic island, and there is a habitat limitation, due to the steepness of the shelf.

It is self-regulated, because of the weather and the sea conditions and the availability of the food source for these deepwater snappers, and there is low fishing pressure. Primarily, it's a line fishery, and so they provided the buffer that they recommend and the reasons why they recommend these buffers, and so I'm just going to go down the list for the groups that we have for St. Croix.

Queen snapper, it's one species alone, and, again, they recommended a 10 percent reduction from the ABC to the ACL, although they recognize that the fishery status is unknown, and, again, there are habitat limitations. There is limitations on the weather when you are prosecuting this fishery, and there are already in place bag limits for the recreational harvest of these species in the federal waters.

The group of the gray and the lane snapper, which is considered as one -- Wherever you see an asterisk, that means that that species has been considered as the indicator species for that

group. However, in the Virgin Islands, since 2012, they have had all the species that are considered for management in their forms, and so there will be species-specific information.

However, based on the fact that one of them might be harvested or targeted more than the other, that's one of the reasons why there is an indicator species, and so, for the lane snapper, there is a seasonal closure in place, both for the state and the federal waters, and there is low fishing pressure, and it's not a directed fishery.

There is limited shelf habitat. They are common, but not abundant, and the federal waters and recreational bag limit possessions are already in place, and they have been in place since 2010. Those are the gray and the lane.

Mutton snapper, it's considered as a separate unit, and this one has not only a seasonal closure, but it also has an area closure to protect the spawning aggregation. They are recommending a 10 percent reduction from the ABC to the ACL.

It is known to consume the lionfish when presented dead, and that's an important note that they made, and it's a long-lived species, but it also -- They consider that it's a healthy population, and it's abundant all the way to the shoreline, and probably the main reason for the 10 percent has to do with the compatible regulations that are already in place.

Schoolmaster, it's only a 10 percent reduction from ABC to ACL. It's very common in shallow waters, and federal waters have a recreational bag and possession limit. That is regarding the snappers, and I am going to finish all the species groups.

Nassau grouper and goliath, we can take those together, because the ACL -- They recommend that should remain at zero, because of the regulations that are in place. They are sex-changing fish, and they can be subject to heavy fishing pressure, and so this is all coming from the DAPs, and they should remain as an ACL equals zero, and so, for the next group, which is the coney and the graysby -- They are abundant, and they are the smaller-sized groupers. They are found on reefs, and graysby is common, but not as abundant. It's a healthy fishery, and there are federal waters recreational bag limits and possessions in place.

For the red hind and the rock hind, the red hind is then considered the indicator species, and they recommend a 10 percent reduction. Red hind forms a seasonal spawning aggregation, and these can be subject to heavy fishing pressure,

but there is a seasonal area closure in place in Lang Bank. They do change sex, and the most abundance of the larger groupers is in deeper reefs, and there are bag limits already in place for the recreational sector.

The black, red, tiger, and yellowfin grouper, yellowfin being considered the indicator species, and there is a question mark about the 10 percent reduction, and their occurrence in the fishery is rare. They don't think they have sufficient habitat or that the habitat is suitable for these species.

They occur in the shallow shelf and the steep slope, and they are known to form spawning aggregations with other grouper species. They are sex-changing individuals, and they are believed to be misidentified on the commercial catch reports. There is a federal and territorial seasonal closure in place already, and there are federal recreational bag and possession limits. They are also slow-growing groupers. This is the information from the DAPs to the council.

In terms of the other groupers, the misty grouper, also they recommended a 10 percent reduction. Federal waters have a recreational bag and possession limit in place. They are deepwater species, and they are rarely found in the fishery. They are mostly a bycatch of the deepwater snapper in the fishery.

That is for the groupers in St. Croix, and, as I said, all this species-specific information is available since 2012 for St. Croix. Before that, it's all family information, but this is the information known to the industry.

For the grunts, there are two grunts that are proposed for management, the white and the bluestriped. They both have a recommendation of a 10 percent reduction from ABC to ACL, and there are the larger common grunts in the commercial catch, with the other grunts that are not proposed for management. Juveniles are abundant in inshore seagrasses. They are not as abundant as the French grunts and other smaller grunt species, and there is no size or harvest restrictions for these in the state waters. There are bag limits for the recreational harvest in the federal waters.

No porgies, and so, for the squirrelfish, they also recommend a 10 percent reduction from the ABC to the ACL. There are no size restrictions. However, they sell as part of the bycatch in St. Croix, and, additionally, in the federal waters, there is recreational bag limits for these species also, and so none of

the jacks are proposed for management.

For the parrotfish, there are three parrotfish that already have an ACL of zero in the federal waters, and so they recommend to maintain those. There is no harvest or possession for these three. They are large, long-lived, slow-growing species, and they are ecologically important herbivores, and so, in terms of the fishery per se, that is considered to be extinct, and so that means that they won't harvest them in large quantities, and so those are the rainbow, the blue, and the midnight.

For all of the other parrotfish, and they are present on the forms with the species-specific information, but they recommend a 10 percent reduction for each one of those. The asterisk, in this case, means that there was disagreement in terms of the percent reduction to be applied from the ABC to the ACL for parrotfish, and, specifically, the disagreement was that there should be a higher percent reduction, a 15 percent reduction, for these other species, because of their ecological significance, and so they wanted to make sure that that disagreement was brought forth to the council.

Among the rationale that they produced, it's that they are ecologically-important herbivores and sand producers. There is heavy fishing pressure by nets and spearfishing. There is low abundance reported inshore and an observable decline in resource abundance by fishers and the recreational diving industry. There are poor fishing practices. Netting with scuba removes entire breeding schools.

Redfin parrotfish are found along with high-wave-energy shorelines, and there is lunar monthly spawning potential. They do change sex, and they have terminal phase males that are brightly colored, and so they probably receive a high targeting. Con-specific schooling and feeding behavior, and they may feed with other parrotfish and surgeonfish, and there is already a federal water recreational bag limit and possession limits for these.

There is, in St. Croix, additionally, a minimum size for parrotfish, having all of them, except for the redband, a nine-inch minimum size, with the redband having an eight-inch minimum size.

The blue tang, the ocean surgeon, and the doctorfish, they recommend a 10 percent reduction for these three surgeonfish, and they are marketable, and they are ecologically-important herbivores. They do have a recreational bag limit, and they

have observed a decline in the resource abundance, the fishers have, and the recreational diving industry has also reported this, but not as significant as the parrotfish. Con-specific schooling and feeding behavior, and they may also feed with parrotfish, and there is a trap and spear fishery in St. Croix for these three species of surgeonfish.

Of the triggerfish, there is only one proposed for management in St. Croix, and that's the queen trigger. Again, a 10 percent reduction from the ABC to the ACL. They are limited in habitat, because of the narrow insular shelf platform. There is no directed fishery; however, but it's targeted by the spear and the trap fishery. There are recreational bag and possession limits in the federal waters.

Hogfish didn't make it into the list for St. Croix. For the angelfish, the three of them are considered one unit, and, again, a 10 percent reduction from the ABC to the ACL. They are ecologically important. They feed on sponges, tunicates, and zoanthids and algae. There is no directed fishery, but they are, however, targeted by the trap and the spear fishery. There are recreational bag limits in the federal waters, and there is an additional percent reduction that was used by the council during the last cycle of the ACLs, because of their ecological importance.

The dolphinfish, this one has been on the form for a long time now, and they recommend that the ACL be equal to the ABC, and so there have been no reductions. It's a pelagic, schooling species that is a seasonally abundant and underutilized species. It's fast-growing, and it's sexually mature at two-kilograms. They are prolific spawners, and there is a directed seasonal line fishery by the commercial and recreational fisheries. There are no regulations in place as of today.

The wahoo is the other of the pelagics that made it into the proposed list. Again, the ACL should be equal to the ABC. It's a pelagic species, and it's seasonally abundant. It's an underutilized species, and it's larger individuals, solitary or in small groups, and they are concentrated where bait is abundant at the shelf edge, around the fish aggregating devices or beneath floaters, and there is a directed seasonal line fishery by the commercial and recreational fisheries in St. Croix.

Again, the queen conch, the only area in the federal waters that it's open to fishing for conch is in St. Croix, around Lang Bank, and they recommend a 10 percent reduction in the ABC to

the ACL. There are federal and territorial water compatible regulations, and there have been for a long time. There's a size limit, and they have had a harvest quota, and they have an ACL, which is 50,000 pounds for the whole area. They do have limits on the number of conch per day and per boat that they can bring in for both the commercial and the recreational sector.

These regulations have changed over time, and so they are here, and there is a seasonal closure in place that might occur earlier if the quota is reached. There is a prohibition on the sale of undersized queen conch, and they actually also talked about the CITES regulations that apply to exporting queen conch. There is safety concerns regarding the queen conch fishery, both from the depth and the other, and it has to do with harvesting and bringing the conch shell to shore, and so that's an issue, and so that's it.

Then you have the cucumbers and the sea urchins, that the ACL should be equal to zero, because of their ecological importance. There is a sand-filtering capability, and they actually provided information on how many pounds of sand are filtered per year. They remove algae, and they maintain the healthy status of the ecosystem, and so all of this information has been brought to you, and the same thing with the corals, which is the basis of the fisheries in this area. There is no harvest allowed right now, and a permit is required for any kind of scientific collecting, but there should be no actual permits out there for collection other than scientific, and that is the summary for St. Croix.

MIGUEL ROLON: Graciela, what do you need from the council at this time?

GRACIELA GARCIA-MOLINER: Well, you have to keep in mind that this is the recommendation from the ABC to the ACL. The ABC will be provided to the council by the SSC, and they are still under discussion about what that is. These recommendations that the DAPs have made are based on the information that they have of so many years of fishing, but also on the scientific information that has been made available to them and in discussions that they've had. We do have the DAP Chair for --

MIGUEL ROLON: What we need to know is what we need to do now, before lunch, with that report. Do we accept the report and then continue with the process?

GRACIELA GARCIA-MOLINER: You can accept the report and look at the recommendations that they've made, or you can request

additional information from the DAP Chair, especially where there is a question mark after the 10 percent, or you can discuss the 10 percent versus 15 percent of the parrotfish reduction from the ABC to ACL that's been recommended, and there was no consensus in the DAP.

MIGUEL ROLON: Bill, at what time does the council have to finalize the decision on the buffer between the ABC and the ACL?

BILL ARNOLD: You can do it anytime that you want to. I was anticipating at the December meeting, but we've still got a lot to talk about this afternoon on this, and so I think we should wait right now.

MIGUEL ROLON: The reason I am asking you this is because we will have a meeting of the SSC after this meeting, and then you will have to have all of these elements of judgment before you make a final decision, but the goal that we have is to have this document ready for public hearing and approved at the December meeting, and so I encourage the council members to take these tables and read them and prepare questions that you may have for this afternoon's session. We still have some time.

I also said that we would like to do this group-by-group, and so, Mr. Chair, do any council members have a question or do we have anything to add from the Chair of the St. Croix DAP at this time regarding the presentation made by Graciela? Eddie, do you think that the report represents what you decided at the meeting, or are we missing anything that you think that Graciela needs to add?

EDWARD SCHUSTER: There is only one thing that I saw here on the report. In terms of the parrotfish, when it says, "poor fishing practices", I thought that we excluded that. The fishers that used gill and trammel nets, they no longer use it. They use a different method, and it's an art. It's less fishermen that use this method now. It's a smaller mesh, and it goes to like a bag. The fish are removed, or, actually, they are removed alive and no longer entangled into the netting, and the catch is actually picked, and all species that are harvested within this method goes back alive, just like trap fishing, and so it's not a poor fishing practice.

Yes, it's a net, but it actually serves as a wall, and then it goes to like a bag, and the fish go into a bag, like a purse seine, and then it goes to the surface. The fish are alive. It goes to the floor of the boat, and then the catch is picked, and so that's the only question or change that I would like to see

on there. Everything else is fine.

MIGUEL ROLON: In the case, Mr. Chairman, if you don't want to have any more discussion, then the council can accept the report of the DAP. Remember that you are going to use this when you go species-by-species, at a point in time during 2017, and you will decide whether you accept the recommendation or not from the industry regarding the percentage between the ABC and the ACL.

In some cases, your percentage could be wider, and you would reject the 10 percent and say it is 15 or 20 percent or whatever. In others, you would say, well, we don't need that 10 percent, because we have better information, and, therefore, the ABC will equal the ACL for these particular species.

That would be a decision that the council would have to make before we go to public hearings, and, talking about public hearings, just to announce this, we intend to -- This is a complex process, and you have a lot of jargon and a lot of information, and so, between the December meeting and the public hearings, we will have a series of workshops, similar to the one that Julian and the group of fishers and the government requested, and we have the participation of Dr. Bill Arnold. From what I gathered, in talking to Julian and others, it has been a success story, that you have a better grasp of all this information.

At a point in time tomorrow, when talk about the education and outreach, I would like to hear from Julian as to what the fishermen would like to see in these orientation meetings. For example, an explanation of all the alphabet soup, and that would be nice, and also refreshing the minds of the people present about all this process and the information that we are presenting.

Mr. Chairman, if the council is satisfied with the presentation, and keep in mind that these tables that we distributed to all of you, keep it with you, so that you can look it over, and that won't change until December, at least the presentation from the DAP. What might change will be the ABC for some of the species, the scalars that Dr. Richard Appeldoorn was mentioning before, and so you will have to combine the information from the SSC and the information from the DAP to make your decision. I believe that's the only thing that we need, Graciela, at this time, is just for them to accept or not the report. Then we can go to lunch.

GRACIELA GARCIA-MOLINER: This is quite an exercise, because you

are going from an ABC without knowing what it is, based on the knowledge that you have of your fishery, to recommend a reduction from that number, and that could mean a number of thousands of pounds in your fishery, to that ACL that they perceive as being fair and good for the fishery, and so it's quite -- It's done by faith, in terms of going from not knowing what the ABC is to that percent reduction that is recommended.

MIGUEL ROLON: Don't use "faith" here in the process. The legal people will jump at us.

CARLOS FARCHETTE: Dr. Ponwith.

BONNIE PONWITH: I can understand where that would cause some consternation, but the buffer between ABC and ACL is actually a reduction based on scientific uncertainty in your understanding of the status of that stock, just like the buffer -- I guess the scientific and management uncertainty, and so the reduction from OFL to ABC is the scientific, and the buffer from ABC to ACL is the management uncertainty.

What it really takes is an understanding of what kind of grasp the council has on the effectiveness of our management measures, and so certainly understanding what that ABC is quantifies where you're at, but the thing you need the most information on is really what those management measures are and how effective those management measures are.

GRACIELA GARCIA-MOLINER: In fact, that's one thing that the DAP has been considering, that the management has been effective in the way that it has been implemented.

MIGUEL ROLON: Again, at this time, the only thing that we need to hear from the council is whether you accept the report or not. It's not to decide on everything that we're going to do for the next two years.

CARLOS FARCHETTE: I have a question on accepting this from the DAP. This is accepted as consideration, because we still need the SSC's final determination, right?

MIGUEL ROLON: Yes, the only thing that you do in this case is just accept the report. Okay, fine, and you give it to me and I have it here. It doesn't mean that you will go and do whatever they say they are going to do there, but the important part of the DAP is that the industry is giving you their rationale for that buffer.

When you hear from Puerto Rico and from St. Thomas/St. John, they may have a different approach to some of the species. We have to then collect that information for you as a council to make the decision. Let's say, for example, bluefish, whatever that is, and you see that fish is very important for St. Croix, but not necessarily important for Puerto Rico or the St. Thomas/St. John area, because of the market situation, the idiosyncrasies of the society that lives there, and then you have a 10 percent reduction between the ABC and the ACL.

Puerto Rico may have that species, but it's not such a concern for them, and so they will rely on St. Croix for the final decision on those species if we only have one management plan. Given that this is island-based FMPs, the council has to rely on the socioeconomics and the science applied, in this case, to St. Croix, for you to decide what species and what level of fishing you will allow in St. Croix.

When you go to St. Thomas/St. John, you will see that most of the species are market driven, and you have to take that into consideration, and you have to take the rationale prepared by the District Advisory Panel members for all the species that you have here regarding that buffer, and so, in other words, by accepting the report, with the provision that the amendment made by the Chair, Eddie Schuster in this case, we are just saying, okay, fine, we have that and it's part of our process.

Again, don't just put this on the shelf. I would like to encourage the council members to read it and make notes, so that, when we get to the final decisions on these species, you will have a better understanding of the whole issue.

CARLOS FARCHETTE: Blanchard.

TONY BLANCHARD: A motion to move to accept the rationale of St. Croix, the report.

MARCOS HANKE: Second.

CARLOS FARCHETTE: We have a motion by Tony Blanchard, and it's seconded by Marcos Hanke to accept the report for the St. Croix District Advisory Panel as presented. Any discussion? **Hearing none, all in favor say aye. It would be with the amendments by the DAP Chair for St. Croix. Any nays; any abstentions. Hearing none, the motion carries.** We will break for lunch until 1:30, but, first, Marcos wants to say a quick note.

MARCOS HANKE: There is an exercise of sustainable fishing

education that we're going to do, and I brought a fish that is in the back. Unfortunately, it was prepared a long time ago and not a few minutes ago. It's not warm, but it's still good, and I want you guys, whoever are not allergic to fish or don't have any trouble of eating fish, to taste it, and I'm going to put which species of fish it is on this list. I just need to know which species it is.

RICHARD APPELDOORN: I have a quick announcement. I was told this is Roy Crabtree, and the t-shirt is from twenty-three years ago, 1995. He has filled out some.

(Whereupon, the meeting recessed for lunch on August 15, 2017.)

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August 15, 2017

TUESDAY AFTERNOON SESSION

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The Caribbean Fishery Management Council reconvened at the Courtyard Marriott, Isla Verde, Puerto Rico, Tuesday afternoon, August 15, 2017, and was called to order by Chairman Carlos Farchette.

CARLOS FARCHETTE: Let's get back to work. We are going to continue with Graciela on the District Advisory Panel Meeting Recommendations.

PUERTO RICO DAP RECOMMENDATIONS

GRACIELA GARCIA-MOLINER: Now we will move on to Puerto Rico, and it's basically the same setup that we had before, and so we're going to go and look at the deepwater snappers, and so the unit here is black, blackfin, silk, vermilion, and wenchman, with silk being the indicator species. They constitute a unit, and the DAP Puerto Rico recommends that the ACL be equal to the ABC.

This is a very valuable fishery, and demand can be met. Natural mortality by growing old is larger than mortality due to fishing, and so some of the comments that they made was that they would be -- That they don't harvest the very, very large individuals, and so there was probably a very healthy population down at depth.

The second unit is the cardinal and the queen, and, again, the ACL equals to the ABC. It's also a very valuable fishery, and the demand can be met. Natural mortality by growing old is larger than mortality due to fishing, and regulations are in place by the DNER special permits, and they are limited by the number of days that they can fish, and so it's 120 days, and the weather plays a big role in limiting the fishing that can be carried out. I also should say that these two species are under ACLs, and they do have a bag limit for the recreational sector.

Moving along to the shallower species, the lane snapper, there is a difference in -- The ACL should be equal to the ABC. There are differences in value of the lane snapper of three-dollars per pound versus seven to nine-dollars for the deepwater snappers, and the mutton, dog, and schoolmaster are one unit. Again, the recommendation from the DAP Puerto Rico is that the ACL equals the ABC, and there are seasonal closures for the mutton snapper in place in the EEZ and the local waters.

Yellowtail snapper, it's a group of its own, and the ACL equals the ABC, and that's the recommendation. They do form big aggregations, and the fish population has significantly increased. It's a stable fishery, and there are size regulations in place, both in the state and the federal waters, and there are not many fishers going after them around the island. It's a very specific lunar fishery.

The cubera snapper is on its own. The ACL should be equal to the ABC. I think that part of the discussion had to do with the limiting the number of cubera because of the ciguatera issue, but we have the DAP Chair here if I am missing anything from the rationale.

The Nassau and the goliath grouper, the ACL should be equal to zero. They are both banned from being part of a fishery in the state and the federal waters. The coney and the graysby become one unit, with the coney being the indicator, and the ACL should also be equal to the ABC. When there is no information offered, the basic comment throughout the DAP Puerto Rico was that they were healthy populations.

The red hind and the rock hind, with the red hind being the indicator species, the ACL equals the ABC, and apparently the market doesn't want large red hinds. The three to five-pounders are hard to market, and there have been regulations in place that have actually worked, and so this includes a seasonal closure in state and federal waters and specific area closures in both state and federal waters.

The larger, deeper groupers of black, red, tiger, yellowfin, and yellowmouth, they all constitute one unit, and they recommend that there be a 10 percent reduction from the ABC to the ACL. There are federal regulations in place, and there is only -- I think that the yellowfin grouper is the only one that has state regulations of a seasonal closure.

For the misty and the yellowedge, which are deeper than the rest, the ACL equals the ABC, and these are usually harvested with the deepwater snappers. Moving along to the grunts, the only grunt that is proposed for management is the white grunt, and the ACL should be equal to the ABC. They have a large presence, and there is an abundance of white grunts. There is low fishing effort as a targeted species, and it's low value, but it's very abundant.

None of the others are proposed, and now we move on to the jacks. They are looking at them separately, and so the ACL should be equal to the ABC for all of them. It's mostly a recreational catch, and it has very low value commercially. They are abundant, and the rainbow runner is seasonally harvested.

For the parrotfish, the three larger ones, the rainbow, the blue, and the midnight, there is a ban for these in the EEZ, but the recommendation is to have an ACL equal to zero, as it is now, and then they separated, I believe, the parrotfish, unless it's just because there is no redfin proposed for management here, but that the parrotfish have a reduction of 10 percent. In most cases, there is very little demand for the parrotfish, and they consider them to be abundant, but the water needs to be clean water. Otherwise, they will not be present.

For the surgeonfish, the blue tang, the ocean surgeon, and the doctorfish, the DAP Puerto Rico recommends a 25 percent reduction, due to the ecological significance of these three species. They are not particularly targeted or marketable in the area.

For the queen trigger, ocean, and gray, the ACL should be equal to the ABC, and this is marketed in certain areas. It's not marketed throughout the island, and there is no ciguatera associated with the triggers.

For the wrasses, the hogfish, the puddingwife, and the Spanish hogfish, the ACL should be equal to the ABC. It's a healthy fishery, but there is not a market for it, due to the ciguatera,

especially for the large hogfish, and most of the large hogfish are not actually landed.

In terms of the angelfish, the queen, the gray, and the French, the DAP had a range of 10 to 25 percent, and, again, this is really depending on -- Because of the ecological value of these species, and some recommended a higher percent reduction, and so there was -- Well, there was no actual consensus in terms of the reduction for these three species.

There is no comment about the barracuda. It's prohibited from being sold in the state waters, and it's very much associated with ciguatera. For the dolphin, the two species, a reduction of 10 percent and limit the number of recreational fisheries. Have it controlled, because it does impact the market, meaning that the recreational harvesting large quantities and selling the fish, and it floods the commercial market. Therefore, it makes it decrease in price. There is a need for a size limit for these species, and the recreational fisheries need to be controlled. There is actual bag limits for the dolphin in the state waters.

The little tunny and the blackfin tuna, and so consider that there are large catches of these. One of them, the little tunny, is mainly used for bait for other fisheries, like the deepwater snapper fishery, and the blackfin tuna, although there are large catches, there might be an issue of market saturation.

For the mackerels, the king and the cero, the ACL should be equal to the ABC. Again, they are abundant, and there are large catches and an increased number of hits when they go out fishing. Twenty-pounders are seen in the fishery, but it's a seasonal fishery for the cero, more so than the king mackerel.

For the wahoo, the ACL should be equal to the ABC. There are no actual regulations in place anywhere, and, for the stingray, the comment from the DAP was that it's not fished for. For the queen snapper, there is a question mark, and I think that the issue with the -- I mean the queen conch and not the queen snapper. For the queen conch, that will be an issue that's been brought up to be discussed under Other Business, because the federal waters are closed to the harvest of queen conch in Puerto Rico.

For the spiny lobster, the ACL should be equal to the ABC. There is a significant economic value, but, if too much is harvested, the market will collapse, and the production is higher than the demand. Regulations are in place, and have been

since the 1980s, regarding the size limit and the ban on fishing for berried females and others.

The urchins and the sea cucumbers, the local government has a ban on the take of cucumbers and urchins from the state waters, and they recommend that the ACLs be equal to zero, because of their ecological importance, and the corals to remain the same, the ACL equal zero. Just another note that there are discrepancies in what that reduction factor should be specifically for some of the ecologically-important species. That is what we have for Puerto Rico.

CARLOS FARCHETTE: We have Carlos Velazquez and then Nelson Crespo.

CARLOS VELAZQUEZ: Thank you, Graciela, for this presentation on the recommendation of the DAPs. It's a question on the hogfish. Did you say that the hogfish on page 3 -- The large size of this hogfish is for no sale for the fish markets or any restaurants, but I tried for this big ones, the hogfish -- The fishermen catch them, in this moment, and clean the stomach, and they are pulling the eggs. The result for this process, for this fish, is that --

NELSON CRESPO: For the rationale, I want to add some comments that we discussed in the Snapper Unit 1. They begin reproducing early, and they have a closed season. For the Snapper Unit 2, only around sixty-five fishermen are allowed to catch that fish.

CARLOS FARCHETTE: Crespo, Graciela has a comment.

GRACIELA GARCIA-MOLINER: Regarding the Snapper Unit 2, one of the issues that I believe the DAP was discussing was the fact that there is a permitting -- There is a special permit, but the actual administrative order lapsed in time, but you are still providing for only a specific number of fishers to have that permit. Is that true?

NELSON CRESPO: Yes.

GRACIELA GARCIA-MOLINER: Because one thing is to have the administrative order that might not be in place, because it ran its course, and it has not been reissued, because it had a deadline of two or three years in the original administrative order.

MIGUEL ROLON: Damaris, do you know the status of that order, the executive order that established the limit?

DAMARIS DELGADO: Could you explain which one specifically? We have several administrative orders. Is that the one of the cartucho?

GRACIELA GARCIA-MOLINER: That is correct, yes.

DAMARIS DELGADO: We have been discussing the details of the original administrative order, and we have concluded that we need to amend the order. We first thought that we needed to basically eliminate that original one and have a new one, but then it was decided that we only needed to amend it, and so hopefully that's going to be happening soon. I will let you know.

MIGUEL ROLON: But would be the amendment?

DAMARIS DELGADO: It has to do with what happens when the order is not in compliance with the procedures within DNER, and, also, there is an issue of compatibility between the federal regulations and the state and whether the Secretary will just decide whatever is decided at the federal waters and if she is going to just approve that as it is or not or if she will be open to something different in the state waters.

That is an issue that still we need to discuss a little bit further, that last issue, and I think we have overcome the other things. We have been organizing well the procedures, but we still have some discussion to do with the Secretary regarding the last issue.

MIGUEL ROLON: Not to prolong the discussion, but this is important, especially for the west coast fishermen. There are two issues that we found when we talked with fishers around the island regarding this order. One is some of the fishermen did not -- They were not allowed to be part of the group, because they didn't have the statistics in time.

Two years ago, they came to a council meeting, and they gave the Secretary, the former Secretary, Carmen Guerrero, a list of the fishers who participated in that fishery historically from the east coast. They wanted to have the opportunity to present their case to the Secretary, so they could be included, but the other issue about compatibility is we don't have a limited entry in the EEZ yet for those species.

What we have is that whenever you have an overage, over the ACL that we have, then the fishery will suffer closures, and I

believe that's the compatibility side that you were referring to, and the other one that they are addressing is the number of fishers that will be allowed to fish those species within the area of jurisdiction of Puerto Rico, and taking into consideration that these fishermen -- They come around the shoreline of Puerto Rico and land in the shoreline of Puerto Rico, and this is very important for them to know exactly how many of them will be allowed to fish for the cartucho.

DAMARIS DELGADO: Thank you for that information, and I don't know if I could give you a little bit more insight of our discussions with the compatibility thing. I have talked to one of the lawyers within our legal division regarding that, and, for example, one of the points, the advantages, of having the Secretary being in agreement with all the federal regulations is -- One of the arguments was that we could just take over if, for example, Lynn Rios could make the case, because it's too tight, and then our Rangers could take over those enforcement cases.

Trying to address the gap on enforcement, or just to strengthen the enforcement of the federal regulations, we have tried to -- The Rangers have tried to convey several cases within our agency based on our Joint Enforcement Agreement with NOAA and other statutes, but this lawyer in our office says that, since our fisheries regulation doesn't say that clearly, that we have the power of doing that, that we can't do that. Rangers can't do that if our regulation doesn't stipulate it clearly, and so we need to amend our regulations first, and that is his recommendation.

We are working on a draft updated version of our fishery regulations, and it's something that we need to consider definitely in the near future, but, again, with regards to the enforcement cases that we really want to help enforce federal regulations besides the state ones, but this lawyer -- What he has said is that we have to refer our cases, those cases, to the federal court, to federal court, and we can't handle them within DNER administrative procedures.

This is what this lawyer has said, and I have been consulting now with the director of that office, and then I have to go back to the Secretary with all the information for her to make the decision, and that is a very controversial subject within the administrative order, because it talks about that.

MIGUEL ROLON: If we get rid of that lawyer we can -- It's just because we discussed that with the other Secretary, and the situation is, as you say, controversial, but I believe that,

from your words, you are about to solve that in the near future, so you will be able to have compatible regulations, hopefully.

DAMARIS DELGADO: We are open to suggestions and your recommendations, and so please feel free to send us your recommendations, and we can talk about that later.

CARLOS FARCHETTE: Crespo.

NELSON CRESPO: With Snapper Unit 2, I can assure you that this fishery is very healthy, but we have to find a way to open the door to bring the upcoming fishermen -- Not all, but the serious ones that want to make a living from this fishery, because I guarantee you that that fishery can support more fishermen.

We started seeing big fish and bigger numbers, and we know that we can do it, and so I suggest this council to move forward with a limited entry program and find a way to do compatible regulations for the Snapper Unit 2.

One quick comment with misty grouper. The misty grouper is more of a bycatch than a target. When we go for the deepwater snappers, sometimes we get it, but we don't catch it often. It's a bycatch, and something that is driving my mind since this morning is regarding the spiny lobster.

When Dr. Appeldoorn showed the graph of the Tier 4a, it's okay, and I agree about maybe the possibility to raise the ACL of the spiny lobster, but we have to be very careful with that. It's good for the fishermen, and I am a commercial fisherman, and I am saying that. It's my opinion and not the fishermen's opinion, but we have to do something about the trammel nets, because what are we going to do with all the lobster they catch if we don't have the market?

Do we want that fishery to collapse again, like what happened the past year? That's not fair for everybody, because, at the moment the fishery collapsed, the price dropped, and nobody can win, and so we have to be very careful with that.

CARLOS FARCHETTE: I would like to add something to that. I do agree with you, Nelson. I think trammel nets are a very destructive method of fishing. I believe that what they're doing with what they're using it for, to catch lobster, it's impossible for you to release a lobster that is entangled in a trammel net without dismembering that lobster by the legs or the antennas, and, the more parts they lose, the harder it is for them to survive.

Also, how do you untangle and release an egg-bearing lobster? I just don't see it possible, and I might be wrong, but I know what a trammel net does. I have seen entanglement with trammel nets, and we banned trammel nets in St. Croix. Marcos.

MARCOS HANKE: A follow-up with Nelson. I would like for you to elaborate a little more on the ideas, because this is your expertise, but about the permit for the deepwater snapper to address the newcomers and to balance better the distribution of that permit around Puerto Rico. Do you have any ideas that you can share with us?

NELSON CRESPO: What I see is we have a really good group in the west coast of fishermen that right now they are poachers. They fish for deepwater snapper, and they fish for cartucho, but they don't report it, because they have no permit, and so those guys are really good with that, and they make a living with that, and why we don't bring them into the group, because the resource supports that, and maybe we can make like a scoping investigation in the areas to know the people who fish for cartucho illegally, but they are serious fishermen that make a living with that, and maybe we can bring them to the group. I think it's fair.

(Whereupon, a brief recess was taken.)

CARLOS FARCHETTE: Okay. We're back. We are going to continue. I think Nelson still has to finish up, but, before that, I think Blanchard had to make a statement, and then we'll go back to Nelson.

TONY BLANCHARD: Let me just put this out there, because Nelson was talking about lobsters and the graph that was shown yesterday and the possibility of getting an increase. Now, you need to understand, Nelson, that this is two different things you're looking at. You're looking at a business practice, and you're looking at an ACL.

Because you increase the ACL and you're flooding the market and can't sell it, you're forced to drop the price, and that's not the issue with the ACL. The ACL is your business practice, and you need to cut down and keep your price up, and that will solve that problem, but to be skeptical of raising the ACL because the market is going to be flooded and you're going to crush it and have to drop your price, that's two complete different things you're looking at there, and so maybe these guys need to look at their business practice and not worry about the ACL.

CARLOS FARCHETTE: Okay. We will continue.

MIGUEL ROLON: Graciela, have you finished your report?

GRACIELA GARCIA-MOLINER: For Puerto Rico, yes.

MIGUEL ROLON: Crespo, anything to add? Okay. Then the same thing that we did this morning. We need to accept the report, and remember that keep in mind that this report, along with the St. Croix one, will be used for the discussion, and, hopefully, by December, we will be able to finish the discussion, at least before public hearings.

CARLOS FARCHETTE: So we need a motion.

CARLOS VELAZQUEZ: I move the motion.

MIGUEL ROLON: What motion?

CARLOS VELAZQUEZ: For the --

MIGUEL ROLON: Move to accept the report as presented with the modifications given by Mr. Nelson Crespo. Then, Carlos, you can say I so move, and we'll get a second from somebody.

CARLOS VELAZQUEZ: Okay. **Move.**

TONY BLANCHARD: Second.

CARLOS FARCHETTE: Okay. The motion is to accept the report as presented with modifications by Nelson Crespo from the Puerto Rico DAP.

MIGUEL ROLON: Report from the DAP Puerto Rico.

CARLOS FARCHETTE: Okay. **All in favor, say aye; any nays; any abstentions. Hearing none, the motion carries.** Back to Graciela for St. Thomas/St. John. Bill.

BILL ARNOLD: Before we move on, I just wanted to make a quick comment regarding what Tony just said. He made a very important point that your business practices and your ACLs are disconnected, and that goes in both directions. The fact is the ACL is based upon the biology of the species, and it has nothing to do with the marketability of the species.

You may be concerned that you are going to take too much

relative to the ACL or that the ACL is not giving you enough relative to the market, but the two are and have to be kept separate, and so, again, I think Tony was making a very important point there, and I just thought it was something that needs to be emphasized.

CARLOS FARCHETTE: Okay.

ST. THOMAS/ST. JOHN DAP RECOMMENDATIONS

GRACIELA GARCIA-MOLINER: St. Thomas did things a little bit different, and one of the main differences was that they looked at specific species and actually talked about information that the SSC needed in terms of the analysis that they were going to conduct regarding the species under consideration for the determination of the ABC.

They looked at spiny lobster, queen trigger, hogfish, yellowtail snapper, stoplight parrotfish, mahi, gray angel, doctorfish, and white grunt, and the idea here is that they would talk about what the industry knows about the maximum size of the fish that might not be represented in the information that the DPNR or the Southeast Fisheries Science Center has and what is the depth range where these species occur versus the catch depth at which the fishery is prosecuted, the value that the fishery has, and then come up with a recommendation of the percent reduction from the ABC to the ACL.

They provided information that actually feeds into the productivity-susceptibility analysis that the SSC was carrying out, and this is part of the information that they came up with, and so this supplies information regarding the biology of the species from the experience that they have out in the field, and so they might not be harvesting hogfish that are thirty-six inches, and this is just an example, but that the maximum size that they have seen or found while fishing for hogfish is thirty-six inches.

Most of these sizes might be a bit larger than what is in the database that we have for the life history information that is available, and there is also a lack of information on the depth and the relationship between the distribution of the species and where the actual fishery takes place, and so that is information that has come to the table new from the DAP from St. Thomas.

In fact, for the species, and they actually took into consideration the information, the basic guiding questions also, about whether the fish aggregate for spawning, whether there are

smaller females coming up with eggs, et cetera, and then, based on the information that they have, they came up with a percent reduction recommendation, and so, specifically for spiny lobster in St. Thomas, the recommendation is that the ACL be equal to the ABC.

There is a rationale for that, and there have been spiny lobster regulations in place in the Virgin Islands since the 1970s regarding the size of the lobster that is harvestable, and the same thing for -- It's in the federal waters, and so they have had compatible regulations since the 1980s.

There is the average catch size, and it's a market-driven fishery, and so these are part of the information that they have been provided to make this determination. It's a very, very valuable fishery in St. Thomas.

For the queen trigger, they recommend a reduction of 5 percent. It's also a very valuable fishery in the Virgin Islands, and they base their fishery on a plate-sized fish, and so the maximum size that they record is twenty-four inches, which is not the average size that they harvest, and it's also a market-driven fishery.

For the hogfish, again, the same thing. It's not targeted, and it's considered a ciguatoxic species, but, then again, it grows to -- The maximum size that they have seen is thirty-six inches, and it's a medium value, and it probably has some local market, and they recommend a 10 percent reduction from the ABC to the ACL.

For the yellowtail snapper, which is also one of the very high valuable fisheries in St. Thomas, we have a minimum size in the federal waters. There is no minimum size for yellowtail snapper in the Virgin Islands state waters, but they record the maximum size of thirty-six inches.

The ACL recommendation is that it be equal to the ABC, and it's considered very abundant, and it's also market driven. When there is demand, there is a harvest of yellowtail, and it's also a very specific fishery in the St. Thomas area.

The stoplight parrotfish, they report a maximum size of eighteen inches, and it's a medium-value fishery in St. Thomas, and they recommend a 5 percent reduction from the ABC to the ACL. For mahi, and you can see on the screen the maximum size of twenty-four inches, it's very high, and it's a highly-migratory species. It is seasonal, and the ACL should be equal to the

ABC.

For the gray angel, the maximum size reported is twenty-four inches, and it's a high-value fishery in St. Thomas. The ACL should be equal to the ABC. For the doctorfish, a maximum size of twelve inches, and it's medium value, in terms of value of the fishery, and a reduction of 5 percent. It's very abundant, and, for the white grunt, it's a maximum size of twelve inches, and it's a very high-value fishery. The ACL should be equal to the ABC, and it's also very abundant. We have divided this into two tables that you should have received.

They actually answered every single one of the questions that we had posed at the beginning of the meeting, in terms of how confident are they in terms of the status of the fishery and is it healthy and does it show any problems? Is the size increasing or decreasing in terms of the fish, et cetera?

They went through every single one of the species and answered the questions as best as they could, with noticing that there is some unknowns, like for example in terms of the hogfish, and there are some question marks that they are not sure whether they are seeing smaller females with eggs or not for some of these species.

The information that is available here is what guided the recommendation of the reduction from the ABC to the ACL. Translating this into the table that -- For some of the species, we don't have a specific recommendation from the DAP St. Thomas in terms of the reduction of the ABC to the ACL, but, if you go down the list and stop at where it says -- For some of the species, they have very specific recommendations, as we saw.

For the Nassau and the goliath, it's also that the ACL -- They are banned from federal and state harvest, and the ACL should be zero, and the same thing for the white grunt. The larger parrotfish, the ACL should be equal to zero. For the stoplight specifically, a reduction of 5 percent, and the same thing for the doctorfish. It's the indicator species for that group of surgeonfish.

The same thing for the queen trigger. Hogfish, a reduction of 10 percent. For the angelfish, the ACL should be equal to the ABC, and the same thing for the dolphin in St. Thomas. For the spiny lobster, the ACL equals the ABC. Then the corals, and I think that's what we have.

The information that was gathered from the St. Thomas DAP in

fact was used at the SSC meeting, in terms of information that was needed regarding the life history of the species. It was brought into the scoring of these species during the SSC, and it's actually a very good part of the record regarding the information that is not available at the database that the Southeast Fisheries Science Center has. We have the Chair from St. Thomas here, and that's the report from St. Thomas.

CARLOS FARCHETTE: We have a question from Marcos.

MARCOS HANKE: Can you go back to -- Right there. I have a few concerns about the measurements and the implication that measurement can be used in the future about those fish there. For example, mahi, twenty-four inches, I just caught a little guy yesterday, and twenty-four inches is nothing for mahi. I don't understand that, and, also, I don't understand the carapace length of fifteen inches, and I will have to look carefully on the other ones, but those two really highlight to me. Any comment?

CARLOS FARCHETTE: Julian.

JULIAN MAGRAS: Let's start off with the mahi. I think what happened there, and I have a note. What happened with the mahi, that's the minimum size that we're going to be pushing forward for more direct and commercial guys. We are working with the FAC, the Fishery Advisory Committee, for the USVI, St. Thomas/St. John sector, and we are looking at setting some size limits for both the wahoo and the dolphin fishery, which is the size limits that we are putting in place is actually a little bit larger than what they use up in the mainland U.S., and so I think that's a mistake there on the largest size that is seen.

As for the lobster, the carapace length, that is -- From the guys in the room, that's the largest carapace length that they are seeing. Tony Blanchard caught an eight-and-three-quarter-pound lobster a few months back, and we actually measured the carapace length, and it was seven-and-three-quarter inches big, and we had lobsters that have been caught by some of the other fishers of between fifteen and eighteen-pound lobsters, and so we're going off of the information that was provided by the other fishers and some of the biggest carapace lengths that they have seen on lobsters, and so that's where that fifteen inches came up from.

MARCOS HANKE: Thank you for the clarification. I just wanted to clarify, because this is what it says, this maximum size, and maybe somebody else is going to use that as a reference

someplace, somehow, and it's not correct, for the mahi.

CARLOS FARCHETTE: Okay. Julian, did you have anything to these rationales or anything, or you're good with that?

JULIAN MAGRAS: I'm good with it. We just need to make sure that the amendments that were just said goes into effect, and then we can move forward with this document also.

CARLOS FARCHETTE: Okay. Somebody needs to make a motion.

MARCOS HANKE: I would like to make a motion to approve the document as presented by Graciela for St. Thomas/St. John.

CARLOS FARCHETTE: Why don't we just use the same language for all three?

MARCOS HANKE: With the modifications. To accept and not approve. The language should be to accept.

TONY BLANCHARD: Second.

MIGUEL ROLON: To accept the report from the DAP St. Thomas/St. John as presented and modified by the Chair.

CARLOS FARCHETTE: Okay. Any further discussion? Then I will take it to a vote. **All in favor say aye; any nays; any abstentions. Hearing none, the motion carries.** Thank you, Graciela. Now, we are going to move forward with the Dolphinfish Survey Puerto Rico and the U.S. Virgin Islands Presentation, by Mr. Wessley Merten.

DOLPHINFISH SURVEY PUERTO RICO AND THE U.S. VIRGIN ISLANDS PRESENTATION

WESSLEY MERTON: Good afternoon, ladies and gentlemen. Thank you very much for having me here today. It's really actually an honor to present before the council, and it's been a very riveting discussion so far today, and I'm very interested in all that you guys are doing, and I commend you all for all of your hard work.

The title of my talk in the Federal Register is "Dolphinfish Survey of Puerto Rico and the United States Virgin Islands", but, since dolphinfish goes well beyond the U.S. Caribbean Sea, I think a more refitting rephrasing of the title of my talk is simply "Dolphinfish Research Program: Sixteen Years of Cooperative Fisheries Science", and, literally, I would not be

up here speaking about all of this research we've done if it was not for thousands of recreational and commercial fishermen that have participated in this research program.

With that said, I have prepared kind of a neat presentation, and I've outlined it right here, and so we're going to take a tangent first, and we're going to go over to the Eastern Pacific Ocean, the EPO, where the IATTC is finalizing the first modern stock assessment on dolphinfish. I think there is some lessons learned there and some really interesting information that's going to be coming out from the EPO.

After that, that will lead into some information on management and data sources in our neck of the woods, the WCA, the Western Central Atlantic, and then we'll springboard into some animations on movements and seasonality and then growth and population structure, and we will finish up with some preliminary results from a Puerto Rico catch-and-effort study that we've been doing for the past two years related to the FAD program, which I think is pertinent to introduce during this talk.

With that said, let's go over to the Eastern Pacific Ocean, and so the IATTC, the Inter-American Tropical Tuna Commission, is a very large tuna RFMO over in the Pacific Ocean, and they are conducting an exploratory stock assessment of dolphinfish in the southern EPO focused around Ecuador and Peru. It's right there in bright yellow.

Ecuador and Peru are the largest providers of commercial dorado around the globe. Roughly 47 to 70 percent of commercial catch of dolphinfish comes from the EPO. The genesis of this stock assessment came from concern from IATTC coastal member states coming to IATTC and saying that there is concern about a lack of knowledge, a lack of management, and a lack of participation, in terms of managing the species and the stock throughout this range. They actually went to IATTC to try to get some research on population dynamics and on stock assessments in particular, and so that's how this EPO stock assessment came about.

Management is basically pretty fragmented within the EPO. In Mexico, they have a law that favors the recreational aspect of dolphinfish, but, from the southern border of Mexico all the way down to Columbia, there is really no management, until you get to Ecuador and Peru, where they actually have national plans of action for managing dolphinfish, with minimum sizes, fleet size restrictions, mandatory observing, and mandatory reporting. Also, they have seasonal closures to benefit their commercial

fisheries there.

Because of that, because Ecuador and Peru are the largest commercial providers of dolphinfish on the planet, they have a lot of data, and they have a very good national plan of action for the management of dolphinfish.

IATTC used a seven-year monthly catch per unit effort time series to structure their stock assessment, and the one thing, in dialogue, with the leads on this project from the Inter-American Tropical Tuna Commission, is they said that a lot of their assumptions with movements, stock structure, and connectivity between other EPO nations is lacking, and so that's one place that they can improve their stock assessment in the future. Actually, keep that in mind when we go to the WCA slide, because we actually have a lot of that information roughed out pretty well. If a stock assessment was to be embarked upon in the WCA, we have some interesting information there to be used.

A final report and results are due out soon, but preliminary discussions with IATTC staff -- They indicate that there's been a significant increase in the understanding of population dynamics of this species in the EPO, but the take-home message here is that they have some reference points now, and they could reference these points in the future when they replicate this work, to be able to state what the status of the population is.

Right now, this whole endeavor -- They cannot state what the status of the stock is, but, in the future, they will be able to, when they replicate this work, and so, moving over to the WCA, it's kind of the tales of two oceans and their exploitation of the species.

The United States EEZ is massive, and, within the EEZ of the United States, there are large recreational fleets that target dolphinfish. Over in the EPO, it's largely commercial. Over here in the WCA, we have massive recreational fleets that go out and enjoy targeting this species, and so that's contrary to the EPO, because there is only really pockets of high recreational activity.

Back in 2004, NMFS established a fishery management plan, in conjunction with the South Atlantic Fishery Management Council, and it's gone through several amendments through the years, with the most recent in 2016. That favored fisheries of the Caribbean, the Gulf of Mexico, and the South Atlantic, and, along with that, came a bunch of restrictions in terms of

commercial and recreational amendments, such as minimum sizes, and they also came upon an ACL, which is favored to the recreational side about ten-to-one.

There has been no stock assessment, to date, within the Atlantic Ocean, and so we have no reference points to be able to comment on the status of the population in our neck of the woods, but the Southeast Fisheries Science Center does list it as a priority species, and so, in the future, perhaps the Southeast Fisheries Science Center is going to be embarking on a stock assessment of this species, which would be very valuable, because we would gather some reference points from that endeavor, and we would be able to comment on the status of the population.

We have a lot of data, I would surmise, and we have U.S. commercial catch per unit effort. ICCAT landings and bycatch might be able to be used. The Marine Recreational Fisheries Statistical Survey and MRIP data could certainly be used, and then we come to the Dolphinfish Research Program dataset, which actually has been very useful in terms of roughing out the movements, the seasonality, the growth, and the population structure of dolphinfish within the WCA, and, with that said, now I'm going to talk about the Dolphinfish Research Program dataset and how it could potentially be used in the future to help with some of the assumptions involved in a stock assessment.

We'll talk about some movements and seasonality, and so there are four main tagging zones for the Dolphinfish Research Program. Emanating out of these tagging zones are fishery-independent and dependent movements, and, also, we have analyzed hundreds of surface drifter tracks within each of those different regions, and we're going to talk about this -- The surface drifters were used to test whether dolphinfish movements were different than general surface current flow, and we're going to talk about this relative to the U.S. east coast, the Bahamas, and the northeastern Caribbean Sea.

From 2002 to 2011, along the U.S. east coast, there are 229 dolphinfish movements to the north. We used these data to publish a paper in 2014 to kind of look at the movements, the fine-scale movements, along the U.S. east coast. Within that same paper, we used seven fishery-independent movements obtained from satellite tags to compare whether or not those movements were different than the mark-and-recapture data, and they didn't diverge too much, but they did indicate that fish can come off the east coast considerably south of the Outer Banks.

During this same time period, some surface drifters were deployed along the U.S. east coast which went up the east coast, and some fish were released in similar timeframes and recaptured basically right along the same trajectories, indicating that they are following the surface currents to the north, obviously, but there is variability with that fish caught in the Mid-Atlantic Bight.

Speaking of variability, within the same timeframe, moving in on the Florida Straits, about 4 percent of the movements were to the south. Surface drifters, ADCP data, and high-frequency radar data all indicate a seasonal coastal countercurrent along the eastern Florida shelf, indicating that there's a seasonal coastal countercurrent that these fish might be moving with seasonally, and this merits future investigation, but it speaks to kind of fine-scale movements that you can obtain with mark-and-recapture data.

Moving over to the Bahamas, within the Bahamas, a lot of fish are highly retained within the Tongue of the Ocean and Exuma Sound for as much as seventy-seven days within the Tongue of the Ocean. Surface drifters enter the Bahamas through the Northeast and Northwest Providence Channel Island, and they also come through the channels in the Exuma Sound, but they get retained as well within the Bahamas, and so the Bahamas -- The fishing pressure there, they can hit dolphin pretty hard, because obviously they are being retained within those basins.

Zooming out, we've had recaptures from the Straits of Florida to the Eastern Bahamian Escarpment. Then, when you look at the timing of those recaptures relative to surface drifters deployed in the straits, they're on similar timeframes, from basically 100 to 300 days, and we've had movements from Panama City over to the Northwest Providence Channel Island. A satellite-tagged fish moved from San Juan to Great Inagua, Bahamas, all on timeframes similar to those surface drifter trajectories.

Then, when you look at surface drifter movements from the Turks and Caicos, they highlight a very slow, broad moving Antilles current on the Eastern Bahamian Escarpment, but, below that, you have faster flow in the Old Bahamas Channel, and so this represents two different pathways that dolphinfish can take back towards the United States EEZ, and it kind of highlights different ways and routes that these fish might connect to that location.

Now we're going to move over to Puerto Rico, where we've had

numerous dispersals. We've had one from San Juan to Charleston, South Carolina, and we've had satellite-tagged fish in the Caribbean Sea. Surface drifters here all indicate a westerly movement, with flow through the Anegada Passage, and high variability in the Mona Passage, but all movements have been to the west.

When you start to bring in all these surface drifter tracks and data and then you see the dispersals from the east coast coming down, you begin to see a circuit that is starting to evolve, and so these fish have all been recaptured on 230 to 330 days, and you have these surface drifter tracks circulating the Central Atlantic.

We have had a movement to the Azores and movements down to Puerto Rico and away from Puerto Rico and out from the Bahamas and up the U.S. east coast and back out to the Azores, and so you kind of see that there are these recaptures that have highlighted a potential circuit that these fish are taking annually driven by the Gulf Stream.

Now, then you overlay the EEZ, and you realize that this fish is truly shared amongst all these different jurisdictions, and all these different jurisdictions have different stakeholders and different management schemes, or lack of management schemes. In order to protect this species and ensure the conservation of the species, it's good to be at the table speaking about different types of management measures for each location and how they could benefit the whole.

Looking at this, this is basically just a crude timing. Fish move up the east coast in about one-and-a-half months. The shortest route to the Bahamas would be about three, and then seven to ten months down to the northeastern Caribbean Sea.

We did all this surface drifter analysis and looking at all these recaptures and then deploying satellite geolocating tags, and we were able to construct the most probable track for a bull that was tagged off of Charleston, South Carolina, and we used a common filtering state space model, corrected with sea surface temperature, to look at the dispersal, or the movements really, of this bull dolphin.

During June, it was moving off the east coast, and that's the red. Then kind of north of Bermuda is the orange, and then the yellow is northeast of Bermuda, and it starts to move out towards the eastern flank of the Sargasso Sea during September. Then, during October, it kind of hangs over there on that

eastern flank, and then it really kind of v-lines down towards the northeastern Caribbean Sea during November, and the tag pops off next to Punta Cana in December.

This was absolutely a remarkable feat, not only technologically, but the fact that this fish didn't die of natural causes or didn't get eaten by a marlin or a shark or an orca or whatever, and then the tag pops off 180 days later is truly a remarkable piece of information and pretty exciting stuff.

That kind of ends this segment, this movements and seasonality segment, but the point I want to end with, and kind of the segue into the next segment, is that this fish grew a lot during this time. It was released, and I would have to check, but it was released at a certain size, but it grew down to the spot that the tag popped off.

Going to the next segment, we're starting to look at our tagging data relative to growth, and this is something that's being used a lot, and so migration and life stage size progression through tagging data is something that our fishermen have allowed us to do, because they go out and measure the fish. When the fish are recaptured, those fishermen measure them, and then you compare the two measurements.

These are similar data that you just saw, and we have the circles being the release sites, and the stars are the recapture locations. This is for the Western Central North Atlantic. Down here in the Caribbean Sea, a lot of the recaptures are happening in March and December, but all fish were released as juveniles along the east coast, and they grew to adults down in the Caribbean Sea, and so there is an exchange of biomass occurring between jurisdictions.

When you start to look at the size, the growth, a lot of these fish grew anywhere from 800 millimeters to 400 millimeters, and the range -- When you compare it to the scientific literature from the past fifty years, it falls in the median of the growths that have been obtained from studies with otoliths and studies with scales, which is this next table here.

I don't expect you to read all of this, but this is just to make a point that tagging data can be very useful in understanding the growth of a species like this. In this study, we only had -- During this time period, it was 2004 to 2011, and we only had seventeen fish that we used for this analysis, but it's 2.14 fork length millimeters per day, which equates to about two inches per month, and that is actually a pretty good average of

what this fish grows.

Obviously, there is going to be some variability, but, when you look at the other studies conducted by -- Appeldoorn was one of the studies, and Oxenford and Hunt, and there's been a lot of work on growth, and it speaks to how cooperative fishery science with fishermen can glean a lot of amazing information, and so one thing I would like to kind of end here on, or get close to ending this talk with, is population structure.

We did a population structure study in 2012 and 2013 and 2014, and we collected 306 samples around the Western Central Atlantic, and, really, the impetus of this study was to test whether there is two different populations around Puerto Rico.

We collected 180 samples from Puerto Rico, and some of those samples were collected on successive days, basically to test whether or not the populations were different, and we found that there was low genetic differentiation in populations in samples between the north and south coast, and, when you look at the FST pairwise nucleotide comparisons, there was very low numbers here and low P values, indicating no genetic divergence, and so anglers around Puerto Rico are targeting the same population. There is the analysis of molecular variance, which has a very high P value.

Backing back out to the broader scale, we had four different regions that we looked at, and there was very low indication of genetic variability, meaning that this sampling scheme that we used over the time period of our study found that there was one population that we were targeting, and we used the mitochondrial ND1 gene during this study.

Then I have come to the last kind of slide that I like to present to you. Over the past two years, I've been working on the Puerto Rico FAD system, and the first FAD went in the water on June 3, 2015, and I started -- I had a survey in place right before that FAD went in the water, and we started collecting reports, and so I got eighty-six vessels to submit right around 400 reports over that time period, and all those reports -- When you add them all up, mahi is ten to seventeen times higher, in terms of landings, than all other species.

I was like, okay, they're volunteering to submit this information, and there could be a lot of bias in that, and so then I started a vessel monitoring program, working with fishermen around the island, and I collect their catch and effort on a daily basis, and this is just a raster that I

produced of that effort.

Looking at their catch and comparing it to the online survey, dolphinfish is at the top of the list, and it's about eight to ten times higher than all the other species caught, and so, if you eliminate that top row from -- If, for some reason, dolphinfish can't rebound after a lot of fishing pressure, or if something was to happen to the stock, due to oil spills or due to any other types of natural or environmental variability, a lot of people would be affected.

The last thing that I kind of want you to take home with this is that dolphinfish is just so very important to everybody in this room and to a lot of people on this island and a lot of people within our region, and so I just want to acknowledge everybody that has ever worked with me and helped me and all my advisors through the years, and now I will take some questions.

CARLOS FARCHETTE: Blanchard and then Miguel and then Marcos.

TONY BLANCHARD: I've got a question on the surface drifters. Have you got temperature readouts on them?

WESSLEY MERTEN: For the surface drifters?

TONY BLANCHARD: Yes.

WESSLEY MERTEN: We didn't analyze the oceanographic parameters of the surface drifters.

TONY BLANCHARD: So you didn't get the temperature readouts?

WESSLEY MERTEN: No, we just looked at the drift patterns.

TONY BLANCHARD: Okay, because I think that you would find is the longest period of time that you have recorded a fish on record was, I think, 11.1 months?

WESSLEY MERTEN: That graphic was a crude timing of their movements, and so one-and-a-half months up the east coast, coming around to 11.1 months down to the northeast Caribbean Sea. That's something we haven't published, but that was just a crude kind of rule-of-thumb type of image that I use for that.

TONY BLANCHARD: Because I believe, with weather changes and weather patterns from year to year -- This is less than a year period, correct? What is the length of time that this was run?

WESSLEY MERTEN: This study?

TONY BLANCHARD: Yes.

WESSLEY MERTEN: This started in 2002.

TONY BLANCHARD: No, but you have at least a year of data on that study at one time? In other words, when you run that scenario for the 11.1 --

WESSLEY MERTEN: That's taking all the data that we have ever gotten from 2002 and --

TONY BLANCHARD: So this is not just a one-time shot that it was a year of studying one fish?

WESSLEY MERTEN: No, that's an average over sixteen years of data, and so we've had more than twenty international recaptures down to St. Kitts and Antigua and Puerto Rico and St. Croix. We took all the timing of those movements, and that averaged to 11.1, and so that was why I showed that 11.1 and 3.3 to the Bahamas, because we took the average of all those movements to the Bahamas, and so that's how that unpublished but crude rule-of-thumb figure ended up in that animation.

TONY BLANCHARD: Okay, because the point I'm trying to make here is a dolphin is a migratory fish, just like a wahoo, and, if he is moving with the current, he's also moving with the temperature, and a change in weather from year to year would also be a change in pattern or movement, because they are moving with the bait, too.

WESSLEY MERTEN: Absolutely.

TONY BLANCHARD: I think, over a period of time, unless you have a full year, it could change from year to year as to the movement of the fish. That's what I am looking at, and so the fish could move with the current as well as with the temperature change, because they are chasing bait and they're not stationary on a reef. It's a migratory fish, and so I think the pattern would change, and that's dictated to me, and I believe it will go with El Nino or a change in current from El Nino to El Nina or hurricanes or whatever, just like any type of fishing, I would believe, but some, I believe, are affected more than others.

WESSLEY MERTEN: That's a fantastic point, and environmental correlates are definitely something we want to incorporate into

this dataset. We average about 1,200 releases per year. Of that, we get about 2 to two-and-a-half percent recapture rate, and so you're dealing with thirty to fifty recaptures per year, and so you need decadal datasets to be able to correlate it to sea surface temperature, chlorophyll a, the North Atlantic oscillation, El Nino, all those different environmental aspects of oceanography.

With sixteen years, we've been able to rough out the migration of dolphinfish within the WCA and, coupling that with population structure work and growth work, it's been able to gather a lot of really interesting information that could be used for a potential endeavor, such as a stock assessment in the future, on the species, like the EPO has done.

For the most part, the migration does start along the U.S. east coast, in the springtime. Down here, the peak in Puerto Rico on the north coast varies a little bit from the south coast. The north coast, it's October through March. That's pretty much when it kind of starts to wane down, although now there is FADs here that seem to be aggregating some of the fish.

August has been a really record, I would say, for some of the near-shore activity, because the FADs are only five miles offshore, but there has been some huge catches reported recently in August, which is abnormal, but, on the south coast, Guanica and La Parguera, the peak down there is in March and May, and so you do have seasonality, and so I do agree with you that we need to look at sea surface temperatures more and look at how maybe they're orienting with bait, such as flyingfish and all those different types of lower trophic level species.

CARLOS FARCHETTE: Miguel.

TONY BLANCHARD: I've just got one more question. You said that Ecuador and -- Where is the biggest catches of the dolphin?

WESSLEY MERTEN: Ecuador and Peru.

TONY BLANCHARD: Is there any reason why this is different than any other place else?

WESSLEY MERTEN: Now you're talking about the Humboldt Current in the Pacific Ocean, and it's highly productive. I'm sure you have heard of the Peruvian anchoveta. The largest fisheries in the world are in the eastern tropical Pacific. There's huge upwellings and lots of activity and lots of nutrients.

They don't have a tagging program like this over in the Pacific, and so they don't know where they are moving. The assumptions for that part of the stock assessment are really kind of bad, and that's unfortunate, because, when you go through that type of assessment, you want your assumptions to be solid, but that's the reason why Ecuador and Peru have very large catches, because the productivity of the fishery is there.

CARLOS FARCHETTE: Miguel.

MIGUEL ROLON: A couple of questions, and one is I want to hear your opinion, and not to put you on the spot, but, in the good old days, Oxenford and Hunt theorized that there were two populations, sub-populations, one in the south and then in the north. From your 2012 study, it seems that you have proven that it is only one population, and maybe a subset, but they are the same.

We tried to manage the dolphin, in the good old days, within the Western Central Atlantic, we had a meeting with all the countries involved, and then we also tried to have a three-council management plan to manage the dolphin, and it dissolved, because of many reasons, and lack of interest was one of them, and also because some of the countries were developing their recreational fishery, while others already were developed. Other countries use dolphin for commercial fisheries mostly, or allocate that to commercial fisheries, and others wanted to do it just for recreational purposes.

Puerto Rico is in between, and so the question is do you think that there is an opportunity here to -- First, is there a need to manage to conserve the dolphinfish using the information that you have in the Atlantic, the Caribbean, and what could be a set of management measures that would make sense, taking into consideration all the information that you have collected with the dolphinfish?

WESSLEY MERTEN: That's a really tough question to answer, but, looking across the board at other national plans and what the South Atlantic Fishery Management Council has instituted, there is a host of different management measures that could be implemented. I think that, obviously, you guys are convening and talking about different island-based fishery management plans, and so it's going to vary based on the fishing pressure of that area.

I noticed that the DAP came up with a twenty-four-inch minimum size for commercial harvest of dolphinfish over in St. Thomas,

and that is higher than the South Atlantic Fishery Management Council for recreational purposes. The recreational limit is twenty inches from Florida, South Carolina, and Georgia, eastern Florida, but, when you look at Ecuador and Peru, their minimum size is eighty-centimeters and seventy-centimeters, which is twenty-seven and twenty-six inches.

A minimum size is a common thing that's used, and changing bag limits is another thing that is commonly used, and I think it's five fish per person per day here, thirty per boat, and it's sixty per boat and ten per person in the South Atlantic Bight. Those are the types of management measures that can be looked at as well.

Then you have reporting for -- I mean, if you're talking commercial, then you have reporting aspects of a management scheme, getting them to report accurate landings, to be able to assess the size of those landings and the amount, and to then be able to feed that into any type of assessment that you do on the population.

That's a long-winded response, because I don't want to just say to do this, and you guys are experts at managing, and I'm a fishery scientist that likes to collect a lot of data and work with fishermen, but I think minimum size and bag limits are a common thing that's used for this species.

MIGUEL ROLON: Do you think there is a need for management of this species? What will happen if we do nothing?

WESSLEY MERTEN: Let's look back to 2016, and there was virtually no season for dolphinfish within the U.S. Caribbean and from Key West all the way to Cape May on the east coast, which crippled charters, and it crippled recreational fishermen, and so what happened there? Was it what Tony was mentioning about seasonality of the sea surface temperatures and bait? Was it just the fishermen were not going out to where the fish were, and so we weren't accurately quantifying the amount of landings, because the fishermen just weren't going there?

There is a lot of different hypotheticals, but, in 2016, there was virtually no fishery along the east coast. We only had 600 fish tagged, which our program averages about 1,200 to 1,300 per year, and that's like the lowest on record for our participation. We have guys that love to go out and tag fish, and that's an indicator that there was something happening in 2016.

In the previous year, NOAA closed the commercial fishery for the first time ever, because they exceeded the ACL, which I think was like 1.4 million pounds, if I'm not mistaken, and the recreational side of that is around ten-million pounds per year, which is rarely approached, but they had to close the commercial fishery, and the recent amendment to the fishery management plan was to put some checks and balances in place so they don't have to close the fishery abruptly again.

That was the most recent amendment to the fishery management plan for dolphin and wahoo, but more for dolphin, obviously, and so, yes, I think there's a need for management of dolphinfish, but what that means, in terms of the different islands down here and the different small island developing states over the Caribbean and the island nations of the Caribbean -- It takes maybe the Caribbean regional fishery management mechanism and WCAFC, and maybe ICCAT, to voice some knowledge as well, but you see that through our population structure work and through our movement work.

We are targeting the same population, and it is a critical mid-trophic level species that supports billfish, tuna, a lot of different species that are ecologically important to food webs in our ocean.

MIGUEL ROLON: The reason I asked you all of those questions, if I may, Mr. Chairman, is because we need to have a rationale to do what we do, and, in the case of the dolphin, we can take the position of, okay, it belongs to everybody, and so nobody do anything, because, if I don't do it here, somebody will do it somewhere else, catching the fish I mean, but, on the other hand, if we are proactive and we have enough best available data -- To me, this is the best available data that I have seen in many years for the dolphinfish.

Then we can start in the U.S. Caribbean, and we can join efforts with the Gulf and the South Atlantic, again, and the South Atlantic already has a management plan. You don't have to meet again with them, but you just need to look at what they have established as their management plan and their amendments.

Then we can export that to WCAFC and others and have a working group with the dolphinfish, which is something that has been asked in the last two weeks, whether we would like to have a coastal pelagic sort of a workgroup.

To me, the question to the council is, once we get into this, because, personally, I don't care about the dolphinfish,

because, if nobody does anything with the dolphinfish, why bother the fishers, but, at the same time, my other half says that's not responsible and we need to really move forward with the best available information that we have, and so I believe that, to the council, number one, we have it in the management unit.

Number two, we need to do something that will mean something for the fishery, and not necessarily -- The council maybe can move forward trying to convene other countries in the Caribbean and the other two councils, and this is something that marries some effort, and maybe start the ball rolling for having a management plan that could be really Pan-Caribbean in the future, maybe in the next five years.

WESSLEY MERTEN: That's the precautionary risk-averse approach, which is why, in 2004, NMFS and the South Atlantic Fishery Management Council began to manage dolphin, to take the precautionary and risk-averse approach, and so that is a wise way to go with fisheries. With dolphin, given its importance across sectors, I think that's a really commendable endeavor that you guys can embark upon.

CARLOS FARCHETTE: Okay. I have Marcos and then Richard.

MARCOS HANKE: Thank you, Wes, for the presentation. I will try to synthesize things, and, later, I will do other questions, but, for this group, I think it's important to discuss a few things. First, what I don't understand very well, in terms of once you address the migration of adult or young juveniles that you tag, because you are not tagging larvae, and you are tagging fish that swim and bigger fish.

I didn't see, in the patterns that are originating in Venezuela or any lower part of the Caribbean, to see those patterns, if there is a circle or anything on those bigger-sized fish, and that's something that attracted my attention there.

Also, this little genetic differentiation, with the fish that have larval stages, that move with the sargassum, with patches, especially the last five or six years -- There was a big influx of sargassum coming from the south to the north that changed all of our seasonality. For example, May to September -- Not last year, but the year before, and the three years before that, it was the best mahi season we had, which is totally -- This is not the pattern.

I think it's a big challenge, and it's a good movement that

you're doing. It's very important, and I really appreciate it, but, at this moment, that we have those sargassum influxes abnormal or documented happening, and that would be very hard to really get a handle on this unless they support you and give you more money for a longer period of time of study.

That is my question. My main question is the little differentiation between the two populations, assuming now that everything is the same, but we have a big larvae influx from the south to the north in this case, and maybe the mix is right there.

WESSLEY MERTEN: To comment on what Miguel also said, related to your comment about the two-stock hypothesis that Oxenford and Hunt had proposed back in 1986, and so they used size frequency data at different locations to devise that, and they also, I believe, used some alloenzymes, which was kind of the precursor to modern genetic techniques.

We really don't know what is going down south to Barbados and Brazil and Trinidad and Tobago and the ABC Islands. We have had one single recapture down in Venezuela and another in coastal Maya Mexico over sixteen years, and so where are those fish -- How did those fish end up there, and why are we not getting more recaptures down in that region? That's a good question.

Could it be reporting, that people do not know how to report a recapture when they get it, or are fish dying of natural or fishing mortality along the way and they're just not making it there? The southern aspect of dolphinfish is something that we want to begin to work more on. We want to actually put out some satellite tags in Barbados in the future, and we've been talking about this for years, to see where they're dispersing from, and so the southern circuit that Oxenford and Hunt had proposed is still not completely --

MARCOS HANKE: Clear.

WESSLEY MERTEN: Well, it's not disproven, but we collected samples in Barbados during the same time that we collected samples in Puerto Rico and South Carolina, which I could go back to that sample structure right here, and so, just going back quickly, we collected thirty-five samples from down in Barbados and Dominica and Trinidad and Tobago, and we sequenced a 1,200-base-pair gene. Basically, that just means there is 1,200 things that you're comparing over 306 sequences. From that, there were forty samples from that region.

The hypothesis is that they're going to be different, but the alternative was accepted that they're not, but we could maybe explore using a different type of gene, like a nuclear gene, which has more information and it's a bit more robust, but this was the first kind of very fine-scale and broad sampling genetic study in the WCA, but, when you look across the literature at studies that have been very robust with genetics from the Gulf of Mexico all the way through the Mediterranean and all ocean basins, it all points to dolphinfish has very low genetic differentiation amongst those areas.

The only genetic divergence is between ocean basins, and so there could be fisheries stocks though. Maybe their migration route -- The Orinoco River and the Amazon River could serve as a biogeographical barrier that could prevent fish from coming in this way, and the Gulf Stream is a huge western boundary current, and you saw all of those surface drifters being kind of -- They come back almost in a natural type of drift pattern, and the fish tend to orient with that surface current and following the bait and also reacting to sea surface temperature.

We have a lot of work to do, but, in sixteen years, with all the fishermen, three-thousand-and-some-odd fishermen, that have helped, we're at a really amazing point, where we have published some pretty decent science on the movements. The southern aspect of it though has yet to be answered.

CARLOS FARCHETTE: Richard and then Marcos. First, Marcos has a follow-up. Then Blanchard.

MARCOS HANKE: Wes, there is many things, and this is by experience of using the resource and fishing for the mahi that attracted my attention with the data that you gave. One is that you told us about the average growth or growth of two inches per month for the fish.

Once, by experience, I characterized the landings on the north shore of Puerto Rico, and there is two main things that characterize that fishery. Forget about the FADs now, and I'm talking about the historical population dynamics. People go in the weed lines and on structure to fish on average-sized and smaller fish.

When you go to La Parguera in the south of Puerto Rico, they, by tradition, they go for the bigger mahi, and there is a lot of records caught on the south of Puerto Rico, and, once you put the overlap of the seasonality of where traditionally the fishery takes place, there is -- It's very hard to believe that

those fish that were here, if they are connected -- For some ways on how they pass underneath there and they turn, in one month, thirty pounds more, or twenty pounds more.

There is a few things that still, for me, indicate that maybe there is a very tight bonding between larvae or bigger animals or whatever. The population, at the end of the story, is going to behave together, because they are linked, someway and somehow, but my point is that the adults, once they get to the swimming and to the hunting mode of those adults, for me as a fisherman, it looks like they have a separate -- Someway, somehow, they have a little separate dynamic, and this is my point.

WESSLEY MERTEN: That's a great point. One thing that I will mention right off the bat is, yesterday, August 14, I dove the FADs, and I saw a forty-pound bull in the water with a school of very small females, nine females and one male, and that was in August, and so, yes, in March, you get huge fish down in Parguera. We have put out boxes of satellite tags, because you get so many big fish down there, and it's really cool, but you're right.

The adults -- Well, let's take a step back. Young-of-the-year fish are largely coming out of the Gulf of Mexico and from the Florida Straits, we surmise, and we have fishermen that participate in our program that tag about 400 fish in a week. They're all below the twenty-inch minimum size limit for the South Atlantic Fishery Management Council.

I rarely see a twenty-inch dolphinfish in Puerto Rico. I have rarely seen that, and they might be abundant, but I haven't run across them. The smallest fish that I saw just this past week was twenty-three inches, but people in the Florida Straits are tagging thirteen, fifteen, seventeen-inch fish, and those are the fish that we used in that growth analysis, and if I could just use the -- This is the bad thing about using animations, and so we won't go back, but the point I was going to try to make is the data that I was showing there is those juveniles. Those young-of-the-year fish are the ones that are being tagged, and they are being recaptured as adults down here, and they have grown 800 or 500 millimeters through that time. Does that kind of address your question?

MARCOS HANKE: Yes, and there is many others if we keep talking. Thank you very much.

CARLOS FARCHETTE: Richard.

RICHARD APPELDOORN: Just some clarification on some points, and Wes actually did a good job covering some of those. First of all, on the genetics, the study did find a slight -- Let's call it a hint of a differentiation between the Lesser Antilles and the rest of the populations that were studied.

You were talking about enzyme stuff being done early on, and the techniques that are being used now are as advanced as what you were doing as -- Both the ability to detect differences and the number of samples you need to do that are inverse.

You just need a very few number of fish, and you can get still great resolution potential, and so the techniques that are available just a couple of years after he was doing his work are so much better, and so we could look at this issue a lot more, but the tagging data itself, which is a real physical fish, clearly shows that you have fish coming down even into the Lesser Antilles, and so we know, to some degree, there is mixing.

Even if you have this Lesser Antilles stock that may swing out into the Atlantic when they go off the grid, you still have fish coming out of Florida coming through the system, and so there is the opportunity for mixing, and the fish could switch from one population to another.

As he pointed out, we know nothing about what's happening in the southern Caribbean, and not really a lot about what's happening in the Gulf as well, and so the whole picture of what these dynamics are, and to the degree that they're important to management, is still not clear.

Why do we think we need management? Well, two reasons. One, as we're seeing, this fish is just more and more important to both the commercial and recreational fisheries in these areas, and that's going to grow, and the second one is that everybody else is doing this too, and so we have very solid evidence that the fish that are coming through here are either taking a northern route or a southern route along the Greater Antilles, and so maybe swinging in through Mexico, because there have been recaptures through there, and coming around.

All of these countries are taking a piece of the pie, and we have no idea what they're doing, and so to have an idea of what the impact of fishing is on this species, we need to start getting information, and so a critical point of having management for this species, first of all, is going to be data

gathering, so we actually have a better picture of what we're looking at.

In terms of the comments that -- Marcos, you were talking about the sargassum and how that may reflect that, and that could work two ways. One is certainly going to be an effect on recruitment. Since this is going to change distributions on what we think are the juveniles and small fish that are associated with this, that changes in sargassum patterns could cause changes in recruitment levels of these species, and this is a rapidly-growing fish.

It gets to maturity in less than a year, at least for the females, and there aren't that many fish that we know of that actually make it to these much larger sizes and older ages, and so, functionally, at the moment, we're still thinking that this runs more or less as an annual species, and so, if you have something that affects recruitment, you're going to see that impact immediately. If recruitment goes up, great, but, if it goes down, you're going to be stuck.

Again, we don't really know a lot about the dynamics of this. The sargassum, obviously, can -- Also, there is other fish that associate with that, and they're going to be important bait for the fish too, and so it obviously affects the distribution of the adults as well, and so what Wes has worked out with the tagging program is general patterns. It cannot help you on what's going to happen this year versus what's going to happen next year. It's just not designed to do that.

In terms of what we're seeing north and south of Puerto Rico, that is a really interesting thing. If you think of the fish coming down -- When I was looking at this stuff and the study that we were doing and looking at the length frequency structures of the schools that were being targeted, what it looked like is that we were getting pulses of fish coming through the system mainly, or perhaps, coming through the north, initially.

Then, as the season progressed, that distribution might shift further south, and so those smaller fish were coming in initially -- They were coming in along the north coast, and then, as that long pulse grew over time, and you were getting those bigger fish come in, you get some swinging down to the south coast.

That is pure speculation, because we haven't had a tagging program that can address that on that kind of scale, but there

are some really -- There is more interesting dynamics here than what we've been able to determine with the ten years of tagging data being put into this, and so it's like stay-tuned.

The last point is females and males don't do the same thing. There has been studies on -- Wes, you can probably address this better than I can, but, in association with FADs, where females are basically hanging out for shelter, and the males are running back and forth between FADs or other floating objects, basically probably seeking out the females.

Their dynamics are different, and we really don't know a lot about the reproduction of dolphinfish, and so the information you have about where they're getting small fish, suggesting coming out of the Gulf, is interesting, but they are clearly reproducing, from studies that was done by the Fisheries Research Lab here. They are clearly reproducing as they are coming around Puerto Rico.

They probably, or most likely, are reproducing their entire circle around, and so we don't really know what a year class structure looks like. Is it one pulse coming out of the Gulf of Mexico, or are there several pulses that are produced during continuous reproduction as they're swinging all the way through the Atlantic, and so lots of questions here that we don't have the answers for, but they're all feeding back on these questions about what do they do and how vulnerable they might be.

MARCOS HANKE: Thank you for the clarification, and, actually, for all the council members, this is a very important discussion, and having experts at the table to answer this and to start to elaborate strategies and answers and so on is important.

One thing that I would like to mention is that -- You just mentioned that those juvenile areas for recruitment that you have the tagging program for the undersized fish and coming all the way here, and a similar situation of catching mahi this big in quantity we have with the sargassum influx from the south.

It's basically being on the Florida coast or in the Gulf with those big sargassum patches with little mahi everywhere, to the point that I have to change the way I fish for my clients to catch it and release them, because they were too small, and I never saw that.

With the sargassum influx, what I am saying is that we have a big change on the way the fish was here and how big they were

and the seasonality of it. Everything changed because of that, and that came from the south, and that is proven that it came from the south, and the other thing that I want to mention is that, once you have the fish coming on the north, on the winter run, to the coast of Puerto Rico -- As a fisherman, we know that the mahi, once they get bigger, they tend to hunt more for the flyingfish and not on the -- It looks like it doesn't sustain them so well, and they keep going with smaller groups and going downwind, which is east to west, in the case of La Parguera.

Some of the things that we heard, and we are speculating that they pass through the Mona Passage, because we have a shallow-water barrier of some islands down the way, and we are trying to think that those smaller fish pass through there against the wind, up current and down, and this is not what we see in the water the dolphin doing. The majority of the time, and please correct me if that's not true, they go along with the current, or with the wind, in a pattern, and can you comment?

WESSLEY MERTEN: Yes, and there's a couple of slides here that actually I put in at the end that I haven't even presented, but this is about a thousand fish have been released in Puerto Rico, and these are the fine-scale movements. We have had recaptures from south of St. John over to the Mona Passage and from off of maybe Dorado over towards northwest of Mona Island, and so we've had both directions for fishing coming in.

We've had a fish released north of St. Croix, south of St. John, come in. That's that dotted line that you see, the big one, and then you have a fish off of Dorado coming into the Mona Passage, and so both directions, but they're all to the west, and so there's a lot of -- Maybe CARICOOS can be of assistance here in looking at the current structure in the Mona Passage and overlaying it with tagging data.

It would be really neat, and there is this new tag called -- I forget the name, but it basically allows you to do three-dimensional modeling of vertical movements of fish. It would be really cool to deploy some of those tags in the Mona Passage and look at like a three-dimensional vertical movement of fish, to see what they're doing related to that shallow barrier that you're mentioning.

MARCOS HANKE: The tags with an accelerometer on it?

WESSLEY MERTEN: Yes, an accelerometer, exactly. Then that's speaking to the fine-scale nature, but one key point here that is kind of interesting is that the movements on the south coast

are much faster than the movements on the north coast. We have had far less though on the south coast, but, when you fish off of Parguera, the schools move very rapidly, and they are more bird oriented. You're looking for those frigates and the buoy birds, and you get them on them, and the schools are just -- They're not moving as fast as tuna, but they're moving.

On the north coast, it's more weed lines and flotsam and floaties and stuff like that, and that's why, in this figure, we have all those rivers right here. Those black lines are the rivers, all those big rivers shooting out palm fronds, and that's a dream for fishermen to find, because, more often than not, there is a dolphin there or a wahoo there, but that's speaking to the fine-scale nature.

Looking at the dispersal patterns, where is this fish going? Is it going to keep going in this direction and go toward the Yucatan Straits? That's a fishery-independent movement with the satellite tags, and so that fish was going about its way. This is a fishery-dependent movement right here towards Santa Domingo, and so the connectivity is there. Fine-scale though, we need more tags in the water in Puerto Rico.

Recently, with the FAD program, I have been -- I have actually distributed 120 tagging kits over the past four years to fishermen. Of those, I would say maybe thirty tags have been put in the water, and those tagging kits cost about twenty-five-bucks apiece, and I dish them out to anybody that wants them, and so a minimum size would definitely help with increasing the amount of tagging data we get, and that's just a known, and that's why we have so many recaptures down here, because the minimum size over here is twenty inches, and a lot of fishermen catch those small fish, and they tag them and release them, and then we give them a rod-and-reel, or sunglasses, and we get good fisheries scientific data. I don't know where I'm going with this, but --

CARLOS FARCHETTE: I am way past my time here, but I've got to get Blanchard and Ruth real quick.

TONY BLANCHARD: It's funny that you mentioned CARICOOS, and I was wondering if there was any way that you could get the tidal flow up the southern portion, where we don't have any information on, through CARICOOS, and I don't know if they have that kind of technology, but I know that they have it around Puerto Rico, because a guy gave a presentation last year of the tidal flow and the live feed around Puerto Rico, and so I don't know if they have that kind of access to the upper portion where

there is basically no information on the dolphin. That's one thing.

The other thing, like Richard and Marcos was saying about the sargassum, is, just like anything else, fish stocks move. They don't stay in one place, especially a migratory fish. You will find that, in the United States, they move from one state to the other state waters, and so it's no different here with the migratory fish. They will move from one place to the next, especially with something like a change in sargassum, which this seems to have started within the last few years, coming in that heavy and in that mass, let's say.

Maybe what was not the norm at that time is going to be the norm this time, and so, just like anything else, weather patterns change, and so maybe this is a change for permanent, and maybe this is just not a one-shot deal.

CARLOS FARCHETTE: Ruth.

RUTH GOMEZ: I just wanted to mention, because I'm not sure if Alexis explained this to you, but the U.S. Virgin Islands has had a FAD program funded by the Fish and Wildlife Service for over twenty years, and we just submitted a proposal for funding to begin on October 1, because we were really, really impressed with his program.

What we did, in addition to requesting for funding to deploy additional FADs, we also put in to purchase satellite tags and kits for fishers in the USVI. I just wanted to let you know that.

WESSLEY MERTEN: I was aware of that, and I was hoping you would speak up to say something about that, and so thanks. We are going to be giving -- I think it's like 2,000 tags that they requested and tagging kits, and so that will help, and it would be great to get some more movements, like these fine-scale movements that we see right here, to be able to understand how fast the populations are moving through this area.

Then this figure right here is just looking at the surface drifters and averaging it by a 0.5-degree grid and showing the variability. The bigger circles mean more variability. The Mona Passage has a lot of variability in those movements, and through the Anegada Passage. The smaller circles are indicating southerly flow. White circles indicate northerly flow, and so you see that there is a lot of variability in the currents.

When you overlay that with tagging data, you can start to understand the dynamics of fisheries, dolphin fisheries, around this island much better, and the Virgin Islands as well.

CARLOS FARCHETTE: Marcos has a recommendation to the council.

MARCOS HANKE: Fellow council members, you guys have heard about dolphin from me in the past, and one thing, with this new data, that I can see as an option that we should explore and discuss in detail is that it looks like the sargassum influx has been happening for the last five or six years now, and maybe we're still going to have that reality on our fishery, which is going to add interaction with the small mahi that for now is not part of our market and is not targeted, by tradition.

As an option to protect the mahi efficiently without hurting the fishermen, a minimum size maybe is recommended, because, culturally, it will be very easy to understand that, oh, yes, we don't want to catch the little babies, and we catch big mahi in Puerto Rico. We can engage into a tagging program to support the science, but I think we should discuss this deeper as a tool, the way I see it, because of the change in the current patterns and other consideration that we just discussed.

CARLOS FARCHETTE: All right. Thank you, Wes.

WESSLEY MERTEN: Thank you, everybody.

CARLOS FARCHETTE: All right. I've got to move forward. We're running real late here. Island-Based Fishery Management Plans and Draft Environmental Impact Statements and Bill.

ISLAND-BASED FISHERY MANAGEMENT PLANS AND DRAFT ENVIRONMENTAL IMPACT STATEMENTS

BILL ARNOLD: All of this talk has led up to what the council actually does for a living, which is make decisions as to how to manage resources in the U.S. Caribbean, and, to do that, you have to develop alternative approaches to management and then choose the preferred approach, based upon council voting, and it doesn't have to be consensus, but it certainly has to be a majority vote, and then those decisions, those alternative choices, ultimately go into a fishery management plan.

A fishery management plan does not have choices. It has a description of how the fishery is managed. Ultimately, the final environmental impact statement is where the choices are made and where the council makes decisions and makes votes.

This is where the public has input and says we prefer this approach rather than that approach on all the different choices that can be made while developing, in this instance, these new fishery management plans.

That is what we're going to talk about now, and I would like to alert the council that, at this point, 3:42 in the afternoon, there is no way that we're getting through this, because this is really, really important, and it's going to set us up for the December meeting, when the council has to make their decisions as to what their preferred alternatives are going to be, so that we can go out in the spring and conduct public hearings and get the public's comment on these things and come back at the spring meeting, the probably April meeting, and start making the final decisions that will result in these fishery management plans.

What I would suggest and anticipate is, as you know, we have five actions included in these fishery management plans. They are very similar. They are not identical, but they are very similar for each of the three island groups. The first one, Action 1, we've been through pretty well, and so I'm just going to go over that very briefly, and that's determining what species are going to be included in these new fishery management plans.

There the actions are, and the first one is which species are going to be included in the management plans for X island, and X island, of course, being Puerto Rico, St. Thomas/St. John, or St. Croix. I want to be a little detailed, because there is people in the audience that aren't familiar with any of this.

Action 2 is, after we have determined what species are going to be included for management, you have to determine if and how you want to group those species into complexes. You don't have to group them at all. You can just do single-species management, or you can group some, or you can group all, depending upon how you want to go about this.

The third one is the critical one that's being worked on so hard by the Scientific and Statistical Committee, and that's what Richard was talking about this morning, and that is what are the reference points going to be, and those reference points are what is your overfishing level and basically what is your annual catch limit, and those are the two critical measures, as far as the first one, Congress, and the second one, your fishing constituents.

Number 4 is essential fish habitat, and essential fish habitat

has to be designated for every stock or basically every stock included in the fishery management plan. It has been designated for a lot of them. All of the ones that were in the previous fishery management plans have essential fish habitat designations, but, for any that are being added, like tentatively, because no final decisions have been made -- For any that have been added, such as mahi or wahoo, you now have to designate, within these fishery management plans, what that essential fish habitat looks like.

It's an extensive process, but it's really a science-based process and a knowledge-based process. It's not something that so much goes out for comment, and we can receive comments on it, but there's not a lot of decision to be made. You simply describe the essential fish habitat.

Then the final one has to do with framework procedures, and framework procedures simply define various methods the council has at their disposal with which to make decisions as to how they want to, if at all, amend these fishery management plans once they're in place, and so those are the five actions.

Considering how really important this stuff is, it probably would be best if all the council members were in here, but I know everybody probably needed a break. Anyway, so, first, as I said, the choice of species to be managed -- Unless you guys tell me something different, I'm going to keep going.

The choice of species to be included for management, there were three alternatives, and the council has already reviewed these alternatives and basically chosen as their, quote, unquote, preferred Alternative 2, which was a step-wise process that included basically five criteria, the four you have there, but the first one was is the stock in the fishery?

In other words, do we have, throughout our history of landings for any of these islands, do we have landings information that indicates it is or has been caught in the fishery at any one time, and so, once that was established, you then go through the four criteria, Criterion A being are they presently managed, and, if they are, we're going to continue to manage them. If they've got a closed area, or if they've got a minimum size limit, we're not going to drop them out.

Criterion B is do they occur in federal waters, because, in the National Standards, there is very clear guidance that you should manage species that aren't already managed by the state or that don't need federal management. Then Criterion C is are there

biologically vulnerable species from that list of species that are important enough in federal waters to manage, and these were all SSC decisions. Are there vulnerable species or species with essential ecological value? They should be included.

Finally, from the remaining species, are they economically important? For example, mahi, which was not previously managed, was included because of its tremendous economic importance, as we saw from the previous presentation, in this region.

Like I said, these decisions basically have been made, and we have, for each of the three islands, lists of species that are going to be included for management. It was essential to establish these species lists, because, until you do that, you can't go on to Actions 2 and 3, how you're going to group them. You don't know how you're going to group them if you don't know which species you're dealing with, and how are you going to set reference points? You obviously can't set reference points until you've made that decision.

That decision essentially has been made, and that doesn't mean that it can't be changed. You're going to get public comment. In fact, I will mention, in one of these actions, that there is a suggestion to remove a species, but you needed to get these lists together, and the SSC would agree, and I'm sure Richard would not hesitate to agree, but these lists are basically together.

Here is just a real brief overview. These are the outcomes from this, and these are only the species that have been added for management, and so, in addition to queen conch and spiny lobster, which were already managed, sea cucumbers and sea urchins and all corals were already in there, either as aquarium trade species within the Reef Fish, or, I think in the instance of sea urchins and sea cucumbers, within the Corals and Reef-Associated Plants and Invertebrates FMP.

Also, sixty-three finfish species we were already managing, but there is also eighteen new ones. Cubera snapper will be added, and yellowmouth grouper will be added. Gray triggerfish will be added, and three jacks will be added and some rays, as we talked about earlier, and so tuna and cero, wahoo and tripletail and also barracuda, and, finally, dolphin and pompano dolphin. That's for Puerto Rico.

For St. Thomas/St. John, far fewer are being added, and only yellowmouth grouper, wahoo, and dolphin. Then, for St. Croix, only wahoo and dolphin are being added. A lot are being

removed, and I've got a list of the species that are being removed, but we've been through this, and so I don't think we really need to focus on that. We've got more important topics to discuss today.

Then Action 2 is, once you have determined what species you're going to manage, or they're actually stocks, because we do not cover the entire range with these species. It's not just mahi that occurs outside of the U.S. Caribbean. Almost every species that is intended for management or that is presently managed has a range that goes way beyond the U.S. Caribbean, and so we're looking at stocks, which is a sub-component of the species range, and so, how are we going to manage them?

There are a variety of choices, and I want you to keep in mind, and this is very important for both Action 2 and Action 3, that you may choose different preferred alternatives for different stocks or stock complexes. You are almost certainly going to have to do that on the different islands, because of the character of the data that we have available to us with which to make these decisions.

First, you can do the no-action alternative, and we always have a no-action alternative. You retain the stocks or stock complexes presently used for management, and that's fine, but the problem with that is these presently existing stocks and stock complexes do not include the new species, and so those new species would be basically left out, and that's not really tenable. I mean, you could do it and just say we're going to treat those all as individual stocks. That's a possibility, but that's not included in this alternative.

Alternative 2, as I said, you don't have to put them into any complexes. You can just do individual stock management, and that's what Alternative 2 is all about. Don't organize them into stock complexes. Species are managed as individual stocks.

Alternative 3 has a variety of approaches that can be taken, either singly or in combination, and these approaches would basically be the responsibility of the council's Scientific and Statistical Committee. They would make these decisions and then make recommendations to the council as to how they feel the stock should be structured based upon their process.

Their process could include scientific analyses of various sorts, and that would include, for example, cluster analysis, and they did a cluster analysis, and outcomes from the SEDAR Caribbean Data Evaluation Workshop, which is kind of an old

process, but it contains some very valid analyses. Life history similarities and vulnerabilities and combining them based upon their similarities in life history, and they live for a certain very long period of time, for example, and that's a good approach. It can get confusing, because you may be grouping species that in a fishery sense, have no relationship at all.

For example, you could group spiny lobster with mahi, because they are both short-lived, relatively short-lived, and that's not really -- That sounds good, but it's not going to work from a management sense, because, if you implement an accountability measure for mahi, and then you implement the same one for lobster, it just doesn't make any sense.

You can use expert opinion, which is always, given our data-depleted situation in the U.S. Caribbean, in certain ways, and, in certain ways, we have a lot of data. In other ways, we don't have much, but, expert opinion, we use that a lot, and, when it comes to the Scientific and Statistical Committee, there is some pretty strong expert capabilities on that group, and so, particularly the locals like Reni and Vance and Joe and a couple others, they've got tremendous knowledge of these local populations and local fisheries.

Then, once you've made your decision as to how you're going to group them into stocks or stock complexes, you can -- You don't have to, but you can choose to use indicator species, and, if you are going to use indicator species, you need to decide how you're going to use those indicator species and what they're going to mean in a management sense, and that's something that I will talk about here during our discussion of what needs to be done to get ready for the December council meeting.

That is Action 2, grouping the species into complexes or not grouping them into complexes, and so then the meat of this of thing is management reference points for stocks or stock complexes on each of the three island groups, and I first wanted to show you this excerpt from the National Standard 1 Guidelines, which has to do with the flexibility that is available to the council. There is no absolute cut-and-dried approach to establishing these reference points, and, without reading this to you, I will get to the gist of it.

Councils may propose alternative approaches for satisfying requirements of the Magnuson-Stevens Act other than those set forth in the NS 1 Guidelines. Councils must document their rationale for any alternative approaches in an FMP, which is what we're preparing, or an FMP amendment, which will be

reviewed for consistency with the Magnuson-Stevens Act, and what that means is it's going to have to pass muster with the Secretary of Commerce, who is ultimately responsible for approving any fishery management plan or any amendment to that fishery management plan, but you do have that flexibility, and you may need, at least in some circumstances, to take advantage of that flexibility.

If the council does, it needs to be clearly written in the fishery management plan, and so I just wanted to get that out of the way right up front.

Keep in mind, in the small print, and the small print is always important, that each of Alternatives 1, 2, and 3 within Action 3 are intended to be applied to specific stocks or stock complexes as appropriate. You choose an alternative and/or a sub-alternative, if applicable, for each stock or stock complex, and this is the same thing we did in the 2010 and 2011 Caribbean ACL Amendments, where we said we're going to apply a 10 percent reduction to spiny lobster, a 15 percent reduction to snappers, and a 25 percent reduction to surgeonfish.

You don't have to do the same thing, but you just have to clearly state what you intend to do, what your preferred approach is, and then the public can look at those preferred approaches and comment on them and say that I agree or I don't agree and here's what I think you change or whatever it may be. That's what this National Environmental Policy Act procedure is all about, is getting input, considering the input, evaluating the input, and determining whether it will change your choice of preferred alternatives or not.

It does not have to change your choice of alternatives, but you do need to take it into account before you finalize your approach to these fishery management plans, and, by the way, interrupt any time you want with questions. It doesn't bother me a bit. Alternative 1, and this is absolutely essential that you understand this -- Yes, Miguel.

MIGUEL ROLON: Bill, what does the council need to do today, after you finish?

BILL ARNOLD: They need to listen very carefully, and this is going to go into tomorrow, and all I'm doing is setting you up so that you are fully educated, so when we get the outputs from the September 25th SSC meeting, we can bring those outputs and this knowledge you have to that December meeting and use it to construct a public hearing draft and for the council to identify

their preferred alternatives within that public hearing draft.

Today and tomorrow, because this is going to trail into tomorrow, I'm pretty sure, we are going to try to get you fully ready for that. Then, in December, you're going to be making the critical decisions that lead to the finalization of these FMPs in 2018.

MIGUEL ROLON: The reason I asked Bill that question is because this is a little bit complex, and you may want to allow Bill to finish and then go back one-by-one and make sure that you understand every little detail that he has presented, or at least be able to have the essence of that, so you can use it at the December meeting. Also, try to hold your questions until the end, when you go back again, so they have a clear picture of what it is that you are presenting.

BILL ARNOLD: Okay. Action 3, Alternative 1 is the no action alternative. Retain the management reference point values, all of them, MSY, OFL, ABC, OY, and ACL, the whole suite that were specified in the 2010 and 2011 Caribbean ACL Amendments, as applicable, and this is going to be a very important alternative, because, at least for St. Thomas/St. John, there are several groups, at least five, for which no landings data are available. Without those landings data, you're not going to be able to make decisions within the context of Alternative 3 that I will discuss.

In that case, you may need to use, just continue to use, the ACLs that are already established until enough data have accumulated to use the new processes, to use the new approach, and that likely will be a minimum of four years, possibly five years, before those data, from July 1 of 2016.

That is when St. Thomas/St. John, and thank you, Ruth Gomez, for getting this done, added all of these species to the reporting form, and so now we have a fluid match between the data reporting forms and the species that are being managed in federal waters, and that's absolutely essential, but it's going to take a while.

As I said, at the last SSC meeting, the Science Center made it very clear that there is at least one year, if not two years, of spinning the data up, getting the fishermen used to it, and getting confidence in how they're reporting new species added to the forms before you actually start using the data. Then, generally, for almost everything we do, we're using three years of data and calculating an average, and so you'll probably need

three years of acceptable data after you get to July 1 of 2018. July 1 of 2016 to June 30 of 2018 would be the spin-up data, and then you start July 1 of 2018 and go to 2019 and 2020 before -- You can see how time passes very, very rapidly.

In the interim, you need to use -- Almost certainly you're going to need to use Alternative 1, and the critical thing about Alternative 1 is, using St. Thomas and St. John as an example, it may also have to be used for some stocks or stock complexes in Puerto Rico and St. Croix, but you can't partition out these ACLs.

In St. Thomas, you have a grouper ACL. The way we calculated that grouper ACL was to take all the landings we had for every species of grouper, because it wasn't distinguished as to species of grouper, and they simply reported the landings as grouper. It may have been a managed grouper, or it may have not been a managed grouper, but all the data were reported as grouper.

If you now have information on red hind grouper, but you don't have information on other stock complexes, you can't separately manage red hind grouper. You have got to pile them all into your existing ACL and continue using that ACL until you get these data compiled.

Keep that in mind when I talk about indicator species, because the use of indicator species is going to be very important as to how this is done. That is Alternative 1. Alternative 2 is you apply the same methodology that you applied in the 2010 and 2011 amendments, but you have the flexibility, because you're using the process and not those original numbers. Alternative 1 is just the numbers, and your ACL was 62,000 pounds for grouper in St. Thomas, and 62,000 pounds is what it's going to be.

Alternative 2 is we're going to take the exact same process, but we could use a different year sequence, or we could use a different management buffer reduction, or we could use a different scientific buffer reduction, but we use exactly the same process. That is what Alternative 2 is all about. Enough said about that.

Then Alternative 3 is -- Let me go through the rest of Alternative 2. These are the decisions that you will have to make for Alternative 2, to the extent that Alternative 2 is used. First, you have to choose a time series, like I said, and there is a variety of sub-alternatives in there. The first one is you use the longest year sequence of reliable landings data,

and that's that Puerto Rico 1988 to 2009, I think is what we used in the 2011 ACL Amendment, and you don't have to use that exact year sequence, but that is what the longest time series looks like.

Use the longest time series of pre-Caribbean SFA Amendment landings, and the SFA was 2005, and so you would use data up to 2005, but nothing beyond that. Sub-Alternative 2c is 2012 to 2016, the most recent five years of data that we have right now, and we would cut if off, because, otherwise, when we get the 2017 data, we would have to update everything, and we can't keep doing that, and this is basically we will use 2012 to 2016.

Then Sub-Alternative 2d is use another year sequence, something that the council or the SSC comes up with. We always like to leave that opening there in case you decide for this species, for this stock, this stock complex, this island, this situation, we want to use a different year sequence and here is why.

MARCOS HANKE: Just very quick, on these alternatives, once we have to make the decisions, when we have this all the way that you're describing some eloquently, so well, but to decide which set of years we're going to decide for a complex that we're going to create and different scenarios that we're going to create, please, once we get to the point of the decision, we should have access to those different scenarios, to see how it works and where those numbers are coming from, because I don't remember them, to make a best decision about it. Otherwise, I will not be able to make a good judgment.

BILL ARNOLD: Let me address that, Marcos. What happens is the SSC will be making these decisions and providing recommendations to the council, and it's all about the process. This is the year sequence we choose, and this is the rationale we use to choose that year sequence, and then you apply that. It's not about the numbers. You don't work backwards on this. You don't say this is the ACL we want and so we're going to work backwards through the process to get the process that gives us that ACL.

We are going to choose an ACL based upon sound rationale, sound scientific and management rationale, and whatever ACL that leads us to, that's the process, and here is the reasoning of why we choose this year sequence. This is the reasoning of why we chose this scientific uncertainty reduction. This is the process as to why we chose this management uncertainty reduction.

All that does is result in a number, and that number obviously

is a number that can be changed at any time by the council, again based upon sound rationale, but, really, it's the SSC that's going to be making the recommendations to you. We're not going to sit in a council meeting and go through all this landings data and all this stuff the SSC does, because that's just not the way this particular process works.

That's the time series. Then you have to choose your MSY proxy. What we've done in the past is use that average -- Whatever year sequence you choose, the average landings that comes out of that is your MSY proxy. One of the NS 1, National Standard 1, requirements is that an MSY or its proxy be established, and so this is an obligatory step.

What we have done in the past, what you did in the 2010 amendment, was you used average annual landings. What you did in the 2011 amendment for Puerto Rico was you used the median, which is different. It's the middle number. It's not the average. The average is you add them all up and divide by however many you added up. The median is you go down the list until you get to the one that's right in the middle, and that's your median, and they can be radically different.

Then, also, in the 2011, we didn't use the median. We used the mean in the USVI, and so there's a lot of mixing that's been done in the past, and all of those alternatives remain available. Whether you want to use them or not, they're all still out there.

Then your acceptable biological catch, the ABC, you've got your average landings, and now you're going to reduce from that to figure out what your allowable biological catch is, and this is not a number that has direct application, but it is an important step in the process, and what we had done previously is we've set the OFL equal to that average catch, and so it's equal to your MSY proxy. Then, in the past, we've actually set the ABC equal to the MSY proxy and the OFL, and so the reduction was -- The buffer multiplier was one. That's what you used previously, and that's not to say that you have to use it now, but you do have it at your disposal in Alternative 2.

Alternative 3 is different, but, in Alternative 2, you have all of these available to you, and any other that you may choose, and so you could say, well, we're going to cut it by 0.9, and you did that for spiny lobster. We're going to multiply it by 0.85, and you did that for snappers and groupers, and we're going to reduce it by 25 percent, and we're going to use the 0.75, and you did that for surgeonfish and blue tang and those

guys, because they were ecologically important. That is that choice.

These are choices that you guys are going to have to see and have to make decisions on in December, and that's why I am really emphasizing this, unless Action 3, Alternative 2 never comes up and never needs to be applied, and maybe it won't. We won't know that until we come out the other end of that September 25 SSC meeting.

Then this is what the council does, and this is not an SSC decision. That reduction to ABC is an SSC decision. The reduction from ABC to ACL is a council decision, and you chose, in the past, to -- These were the actual reductions that were applied in the 2010 and 2011 Caribbean ACL Amendments, and the council did that at their meeting, and so, again, you will have this choice, and including just making the ACL equal to the ABC.

One thing we have done, and I would like for the council to do again, and I would highly recommend this, is to set your optimum yield equal to your annual catch limit, for a variety of reasons, one of why is because the AM triggers amendment that we will discuss tomorrow is contingent upon that relationship between optimum yield and annual catch limit. I would just like to remind Maria that don't hesitate to interrupt if I miss anything. Thank you.

Okay. Now you've got your annual catch limit, and so those are the decisions that you will have to make for Action 3, Alternative 2, if that alternative is in fact used, and it may not be, and I will talk about that in a few minutes, and so now we've got Action 3, Alternative 3, which is the tentative preferred alternative for the council, but it's only tentative for a couple of reasons.

One is the SSC hasn't finished getting through it, and two is, if the SSC doesn't get through everything, then you're going to have to, or if you don't have the data, you're going to have to fall back on Alternatives 1 and/or 2 for some of your stocks or stock complexes, but this is the one that you have seen so much before.

You adopt the ABC control rule that has been presented, and has been tentatively presented, and I will show that to you, but you have seen it many times, and it's in the next slide. You establish an ACL and an OY by choosing any of the sub-alternatives in Section B, and that is your choice, how much you reduce from that ABC to get to that ACL, if at all, and then,

for stocks and stock complexes in Tier 4a and 4b, which is really the one you're ultimately going to be working with in this control rule, because we don't have any valid assessments, the reference year period of landings is the year sequence recommended by the council's SSC and, and this is where this flexibility in the NS 1 standard comes in, you're going to set your MSY proxy equal to the OFL.

You are not setting the OFL equal to the MSY proxy. The ABC control rule does not establish an MSY proxy. It establishes an OFL, and so you're going to have to kind of work backwards on this, and I will show you here.

There is the ABC control rule, and I appreciate that it's small, but Tier 1 is data-rich. Wrong. Tier 2 is data-moderate. Wrong. They don't apply yet. Hopefully they will one day, but they don't yet.

Tier 3 is data-limited quantitative assessment. All three of these first three tiers, you have to have had a successful assessment at one level or another, and, as you well know, in the Caribbean, we have had no assessments that have provided quantitative management advice. That is a quote from one of my colleagues, and so it's all about Tier 4, and it's all about Tier 4a versus Tier 4b.

We had an extensive discussion this morning, and it depends upon whether the species is, in my words, susceptible to depletion or not susceptible to depletion. If it's not susceptible, or whatever word you guys want to use, because these words have not been decided upon, but this right here, the stock unlikely to be subject to overfishing versus stock likely subject to overfishing, however that's going to be revised by the SSC and the council, and that is going to determine which tier it goes into, and it's kind of moot at this point, because the SSC has already assigned every stock and every stock complex on every island to a tier.

The dirty work is done. The language may not match that quite where they want it to be, but the concept is clear in everybody on that SSC's minds, and they have assigned it accordingly, and so you've got Grouper Unit 4 in the Tier 4b, along with some obvious ones, but everything else is in Tier 4a.

If you're in Tier 4a, you have got to go through this step-wise process. The first step in the process is reference period landings. You have to have landings, reference period landings. Throughout Tier 4, you have got to have landings. If you don't

have landings, you cannot use Tier 4, and so that's it. If there are stocks or stock complexes out there, as I'm pretty sure there are, that don't have landings, you're going to have to fall back on Alternative 1 or Alternative 2, and that's why I keep stressing that. That's all very doable and very legal and very straightforward. It will be the best science available until it's replaced by better science.

Until the data and the application of those data produce better scientific outcomes, this is what we have, and I would remind you that, as long as these new FMPs are not in place, that's basically what you're operating on anyway. We're operating on the old ACLs and the old science until we get new FMPs in place which create new ACLs that are based upon either new science or the old science that would have otherwise been used, and so it's not like you're copping out here.

You are simply taking -- You want to get these FMPs in place so that you can improve management for those species for which the data and the opportunities are available to improve management. For those species for which the data and opportunities are not there to improve management, you're going to maintain management. You're not going to reduce management, but you're going to maintain it until the data come in to allow you to improve those. That's why we amend FMPs.

We have been amending FMPs for years, because, as data get better, as opportunities and knowledge get better, you consider amending the FMP to change how things are done to reflect that better science, that better data, that better approach, and so that is what that is all about, and so this is nothing to -- It's not a compromise, by any means. It is the taking the best advantage of every opportunity you have, whatever that opportunity may be. The opportunity may be flat, and it may be a drastic improvement, but you just want to recognize it and take advantage of it.

That is the ABC control rule. Now, I don't think, and Richard is welcome to comment, but I don't think that this thing is fully finalized, specifically because of that language, and I'm not sure that the SSC wants to change anything else, and keep in mind that this is ultimately the council's ABC control rule.

It was developed by the council's ABC Control Rule Working Group, and the ABC control rule working group took it to the SSC, and they went through it, and they modified it as they saw fit, and they are bringing it to the council as a component of Alternative 3 in Action 3 for the council to decide if this is

what they can and want to use in this FMP development process.

Then, like I said, the council itself has to choose the optimum yield and the annual catch limit by choosing if they want to reduce from that ABC that was recommended by the Scientific and Statistical Committee, and, again, you can choose to have the OY and the ACL equal to the ABC. That's basically a multiplier of 1.0, which is available to you.

That buffer, that 1.0 buffer, is not available for the scientific uncertainty reduction. It has to be less than or equal to 0.9, but, for the management uncertainty reduction, it can be 1.0. The council doesn't have to choose 1.0, but they do have that available, and there's been nothing written down that says we will cap it at 0.9 or 0.95 or 0.6 or anything else, and so this can range from one to zero, and everything in between is on the table for the council. Obviously, you probably don't want to choose 0.67358, but if you do and you have a good reason -- We have chosen some weird numbers in the past to accomplish specific goals, and so it is available to you.

MIGUEL ROLON: Not to discuss it any more, but just to tell the council to keep in mind that one thing that you could do, and one thing that could be approved, is -- For the species to have OY equal to ACL equal to ABC, you have to have a hell of a rationale and a lot of data to be able to have that cutting the mustard when you submit it to the National Marine Fisheries Service, and so that's something you have to keep in mind.

Some of the species you could do it, but, the majority of the species, with the data-poor situation that we have, it will be very difficult to sustain it through the process of approval of a management plan.

BILL ARNOLD: You have a rationale in place. You could use the same rationale that you used in the 2010 and 2011 amendments, and that was -- You don't have to, but I'm just saying what the previous rationale was. You used a 0.9 multiplier for those species that were not, at that time, identified as undergoing overfishing, which is, at this point, pretty much all of them. You used 0.85 for those that were, and those were the snappers and groupers and parrotfish that were contained in the 2010 ACL Amendment, and you used a 0.75 multiplier for the species that you identified as being ecologically important, the grazers that cleanse substrate for Acropora recruitment settlement or the angelfish that were important sponge grazers or whatever may be identified as a valid reason for using a larger reduction.

Again, this is strictly the council's choice, and you have to remember that, in the previous establishment of these ACLs, the ABC equaled the MSY proxy and there was no reduction. Now you're going to get a reduction of at least 10 percent, and so you ask yourself if there is a management uncertainty reduction that's needed, keeping in mind that, ultimately, what you're trying to do is keep yourself off of that overfishing level, because you've got average landings.

The average, by definition, has variability around it, and what you don't want to be doing is exceeding your established overfishing level, and so, from a practical point of view, that's a target that you want to try to achieve.

Some things to consider, and the council establishes this, but the OY -- I talked about this a little, but this is important. The optimum yield, which is what takes the economics and stuff into account, and this is what is best for the communities and all the considerations, but it was set to the ACL in the 2010 and 2011 Caribbean ACL Amendments, and, as I said earlier, the AM triggers amendment is based on that relationship between the ACL and the OY.

That doesn't mean that you can't change it, and that doesn't mean that anything is set in stone, but these are considerations that you want to keep in mind as you're going through your decision-making process.

Then there is the annual catch limit allocation and management, and that has to do with are you going to do sector-specific ACLs, and that has to do with this AM triggers amendment and the idea that you've got a total ACL, and then you have ACLs allocated to the recreational group and the commercial group, and that's for islands. Right now, only Puerto Rico, but, hopefully in the future, all three islands, where you actually have separate data for each of the two sectors. Then you can say that we're going to manage them separately.

If the commercial sector of Grouper Unit 4 exceeds their annual catch limit, that's no reason for the recreational sector to suffer an accountability measure if they didn't exceed theirs, and so you're keeping the management of these two sectors separate. Now, the AM triggers amendment said that we're not going to do any of this unless the total ACL is exceeded, but the sector-based management is what you're doing when you've had the opportunity, but you don't have to.

You could say, nope, we're going to pile everything together and

it's a free-for-all and everybody catches until they hit the ACL, the total ACL, and then we apply AMs to everybody, and that's how it's done in the USVI. There is no recreational sector in the USVI. There is just an ACL, and the ACL is indexed against commercial landings. When the commercial landings exceed that ACL, an AM is applied, and everybody experiences that accountability measure and not just the commercial guys.

These are the practical applications of these three alternatives. Alternative 1 is for stocks or complexes for which no landings data are available. The established -- I emphasized this earlier, but your established annual catch limit cannot be partitioned, and so, as I said, if you're got a grouper ACL, you've got to continue with your groupers ACL.

Otherwise, what you're doing is you're saying, well, we're going to set up an ACL for this species, but then we're going to use this total ACL for all the other species, and that's really -- If you add them together, you're increasing your ACL, and the rationale for that is going to be difficult to explain, because the species that you've separated out also has landings embedded in that total ACL that you are applying to the other ones, and so, if that doesn't make sense, don't hesitate to ask me about it, but that's why it cannot be partitioned.

Alternative 2, Alternative 2 would be used in the case of stocks or complexes for which landings data are available, unlike Alternative 1 with no landings data. For Alternative 2, landings data are available, and a year sequence has been recommended by the SSC, and the SSC has recommended year sequences for every stock and stock complex on every island, and so you have that available to you.

If, at their September 25th meeting, the SSC is not able, for any stock or stock complex, to assign a scalar, then you would use this alternative, because you're not going to get an ABC from the SSC, and that's a lot of acronyms, but that's the way it is.

Also, if at that same meeting, or at any other time prior to the December meeting, the SSC does not identify a scientific uncertainty buffer reduction, then this alternative will include the existing value, the value that is presently used, and that value is 1.0, and so your MSY proxy, your OFL, will equal your ABC, as it did in the 2010 and 2011 Caribbean ACL Amendments, and so that takes care of that group of stocks or stock complexes.

Finally, Alternative 3 is for those stocks or complexes for which landings data are available and for which the SSC has recommended a tier assignment, which they have already done, and so that part is done, and a year sequence, and they've done that, and so that part is done, a scalar, and the scalars have to be assigned.

That all remains to be done at that September 25th meeting, and a scientific uncertainty buffer. That too has to be done at that September 25th meeting, and so you can see that the SSC's September 25th meeting is going to be a very important and very busy meeting with very specific tasks that have to be achieved for each of these three island groups. This is a big job, but I have watched the SSC in action, and I know they can do it.

Like I said in the yellow, the alternative into which stock or stock complex is proposed to fall will be determined based on outcomes from that September 25 to 29, 2017 SSC meeting, because, after that meeting, it's time to move on and get these preferred alternatives identified and get these FMPs in place, and that -- I have a timeline that I will show you for how that's going to be accomplished. This is Action 4, and I believe, Graciela, are you going to take on Action 4, and do you want to do that now or wait? It's 4:30.

GRACIELA GARCIA-MOLINER: This one is very short, and so I can just go ahead and say that you have a number of alternatives. The main thing is that we are in the middle of trying to decide what to do about the five-year EFH review, because we have recently received monies to deal with that, and I just got some news about something else today, and so that's on hold right now, because we're trying to decide what to do about it.

You do have a number of species for which EFH has not been described at all in any of the other FMPs. Dolphin and wahoo might be the exception, because we were part of the 2004 joint FMP for dolphin and wahoo with the -- There was an extensive EFH revision at that time.

Very quickly, you do have the no-action alternative, and that is not to describe and identify essential fish habitat for species not previously managed in the federal waters of each island. Another one is to describe and identify EFH according to the functional relationship between life history stages and federally-managed species for an island's marine and estuarine habitats.

Then Alternative 3 is to use other methods to describe and

identify essential fish habitat for species not previously managed in federal waters. Now, this would be part of the review of the -- Not the review, but the addition to the March 2004, the way that it was done for all the other species that were actually managed, and so use that same kind of information.

You do have designation of EFH based on the distribution data, Level 1. The surveys are basically are presence and absence, and, for that, we have a bit of information, even for those species that were not part of the managed fishery management units way back when, because, in 1998 and 1999, we did quite extensive tables for many of the species not included for management then.

Based on the habitat-related densities of the species, there might be a few that have some information regarding that, but it would be very limited in spatial distribution, and using spatial data to designate essential fish habitat, and this would include all the qualitative and quantitative data.

We are going -- We are doing a number of projects that might be blending into this, but definitely they won't be ready by December, and so, finally, there are other models that were included in the earlier versions of the designation of EFH, and so habitat suitability models are some of the NOS, and NOS has continued to contribute with information, but, again, for very specific and limited areas that have been part of the monitoring that they have done over the years.

Designate EFH based on data on growth, reproduction, and survival rates, et cetera, and so there is some information that has come up through the SEAMAP monitoring, SEAMAP Caribbean fishery-independent survey, that might be able to shed some light on those other species that were not included earlier in this, and so they are working on providing that information in a GIS format.

Finally, I think the designation of EFH based on production rates by habitat, and there is, on the table, the possibility of reviewing the biological basis of yield for the Puerto Rico and USVI platform, and that was done in 1987, and so that would mean bringing that document up to date that actually had reviewed information that was available on biomass and that kind of information, and so that is some monies that have come to the council to see if we can get that going and have it done within the next seven or nine months.

MIGUEL ROLON: Bill, in the past, the EFH would run parallel or

different from the development of the FMPs and amendments. In this case, can we do the same, because the monies that we received probably will -- We will be finishing that by the end of fall in 2018, and we wanted to have the FMPs approved -- Not approved, but close to finalized before that, or do we have to embed the EFH into the FMPs that we have at this time?

BILL ARNOLD: Maria may have a better answer, but the fact is that the EFH are constantly reviewed. They've got a five-year update every five years, shockingly enough, and so what we will want in these FMPs, prior to the reviews, is a basic statement of what essential fish habitat is for every species included in the fishery management plans.

Like I said, we've already got that for most of them, but for some, like mahi, there is going to have to be some literature work to pull out everything that is known. You are simply going to use the information you have at hand to identify what that EFH is. As you get more information, as you get better information, you would adapt the description accordingly.

MIGUEL ROLON: So that means that we can continue the plan as we will see when you present the roadmap? In the meantime, also the revision for -- We got $100,000 or so, and we will continue, and that will be sort of independent from the plan itself, once we describe the essential fish habitat for the species that we are going to include in the management unit.

BILL ARNOLD: Yes, and you want to be careful of tying things together, because there is always something that is underway. If it's not EFH, it's something else, and, if you're waiting for the endpoint of everything that is out there, you will never get these new FMPs in place, and so, really, as I have said before, these new FMPs need to be implemented very badly.

MIGUEL ROLON: That's exactly my point, and probably this is a good time for Jocelyn to tell us whether we can do that or not.

JOCELYN D'AMBROSIO: Sure, and so the essential fish habitat is a required element of the fishery management plan, and, because you have to manage based on your best available data, if you don't have this additional research that would be best available, you have to use what's available now, and so Bill was saying in these FMPs that you have to have something, and you can amend later when you have additional data, but there has to be, because it's a required element of the Act to describe and identify essential fish habitat.

Then there is guidelines on how exactly to do that, but, at least in a general sense, it has to be included once you are managing the species and including it in your fishery management plan for the fishery that's managed.

MIGUEL ROLON: My recommendation to the council is to allow the staff to figure this out and work it out and then worry about the other alternatives that we are discussing about, because essential fish habitat is nothing but a description of the habitat that is important to each one of the species that you have under management. There is not much alternatives that you have there. The habitat is the habitat, period.

CARLOS FARCHETTE: Can you define "NOS"?

GRACIELA GARCIA-MOLINER: National Ocean Service.

CARLOS FARCHETTE: Marcos.

MARCOS HANKE: Bill, can you send this presentation to us, for us to have as a guideline of discussion to be ready for the other meetings? Like this, we can use that format, once we talk to each other and discuss this and get instructed, but as a document?

BILL ARNOLD: Absolutely, Marcos, but what I was going to propose to the council, and I was going to wait until Maria was done with the framework procedures, but that's fine, is what I -- One thing I do want out of the council at this meeting is input and guidance on how they would like an information packet put together, because what we would like to do is put together the guidance you need that you can use in the interim, between now and the December meeting, to get you ready for that December meeting.

I can't really prepare it until after the SSC meeting is over with, because that's when everything will come together, but the questions you ask and the information you need is what we would want to include in that, and then any briefings you need, whatever you need, because I really want all seven council members -- Of course, Roy is right down the hall, and so I can talk with him about it, and he knows more than I do anyway, but so the council members are fully ready, fully understanding, of exactly what their job is going to be at that December meeting and then be focused on getting that job done, and I don't think that, given as long of a span of a time as we've been working on this, as much as we've been over this, and I think it's in the back of your brain, even if it's not in the front, and you will

have nightmares, and I know that, and so I think you'll be ready.

I think you are ready, and I don't think it's going to be a big problem to get this done at the December meeting, but, as you say, Marcos, this presentation and any other information you feel you need, any guidance, and we want to make sure that we provide it to you ahead of time.

MIGUEL ROLON: We just want to make sure that the guidance is not more complicated than the presentation itself, and so I would take this and maybe discuss it a little bit later, but I believe that's an excellent idea. We have sort of a simple outline that will address the questions that we need to answer in December, and then the council members will be ready. It's like an assignment when you were in school, and then this presentation and the other information that we have will serve as your source document for digging out the information that you need.

You will have to come to the December meeting ready to answer a couple of questions that will be -- Not a couple of questions, but a bunch of questions that will be in that guidance, and then the schedule for the guidance will be after the September meeting, and so probably you will receive that the first week of November or the second week of November, so you will be able then to have a better grasp of what is expected to be done.

BILL ARNOLD: I know you guys are busy, and we'll try to get that package to you by the middle of October, so you have plenty of time. That will give you two full months to look it over before the December 14th or whatever it is council meeting.

I may not be good for much, but I am reasonably good at translating science into understandable terms, and so I think that we're going to be able to give you something that you can work with and that will give you the guidance you want, including this presentation, if that's what you want, Marcos. That's no problem.

MIGUEL ROLON: Actually, Bill, we are hoping that you don't get the mega-millions of Powerball so you can be with us for a while to digest all of this information for us.

BILL ARNOLD: Money is no object, Miguel. Now we're going to go through Action 5, which is framework procedures, and Maria will take care of that.

MARIA LOPEZ: I am going to try to be short on this. This is Action 5, and what we are trying to do here is to establish framework procedures that are going to be in each one of the fishery management plans, and the reason, the rationale, behind having a framework procedure is that the council will have a process that would allow them to adjust a list of management measures that are already established within the scope and criteria in each one of those FMPs and the regulations implementing those FMPs.

Basically, a framework that the council sets up will include all of those measures that the council will need for continuing fisheries management, and the purpose is to allow the council to adjust rapidly a set of measures in response to fishery conditions that are changing, and basically this takes less time than an amendment.

This will be as needed and as appropriate, and we currently use framework measures through processes that are already established in our four council FMPs. For example, use open frameworks, such as regulatory amendments, to make changes to, for example, size limits and triggers to accountability measures.

We also use closed frameworks to apply AM closures to Federal Register notices or temporary rules, and so these are things that we currently have in our fishery management plans, and we need to make them available in these new fishery management plans and make sure that what we have in there that you guys can use to make quicker adjustments, so things don't take as long as an amendment.

Frameworking is not intended to circumvent standard FMP amendment and rulemaking procedures under the Magnuson-Stevens Act. You still have to comply with statutory requirements from the MSA, and you have to comply with other applicable laws, for example NEPA, and so there is still analysis needed.

The thing is that, to the extent that you can anticipate the analysis that you need for a framework when you're establishing it, it means that, when you're ready to apply it, there is going to be less analysis needed, and so, basically, that's where we're going with this.

Right now, we have -- This is, of course, a draft, and we have four alternatives, and our four alternatives -- What they do is they cover a range of reasonable alternatives, something that is very narrow to something that is very broad to something that is

right in the middle.

That is what we have, and Alternative 1 is basically the no action, which will be simply just carrying over the framework procedures that we have currently in our other fishery management plans, which are fine, but it's just that they're a little more general, and there is also things that, based on all of the discussions that we're having and all the changes that we're doing in the adaptation to each one of the island-based fishery management plans, there is things that need to be tweaked to make sure that we make the best use of these tools that we have available.

Alternative 2 will be a base framework procedure, and we're going to go through some of these alternatives in a moment, and so it will be basically like the midpoint, and then we have a broad framework, which is more general, and then a narrow one.

Before I go to the alternatives, I want to make sure that you guys understand the different types of frameworks that we have, and so there is two types of frameworks. There is going to be, as I mentioned earlier, open frameworks, and there is going to be closed frameworks, and the open frameworks are the ones that are, for example, the regulatory amendments that we use, and they address issues where there is more policy discretion in selecting among various management options and, for example, changing the size limit to reduce harvest.

There is also closed frameworks, which is, for example, like closures, and we'll talk about it in the next slide, but, within the open frameworks, and this is something that we may not be familiar with, because we haven't used it before, but it's available as an alternative if the council is interested in using it.

There is what is called abbreviated frameworks, which is a shorter version of a framework that can be used to apply or to do a limited list of actions that are considered to be routine or insignificant, and there are specific -- I just want to make sure that you understand that this list of actions is going to be set by you as a council, the things that can be done that you are interested in doing through a framework.

The abbreviated framework is not your typical regulatory amendment, where you have that document with all the analysis, et cetera. You still have to do your analysis, but the thing is that, because these actions are considered to be routine or insignificant, or you have conducted analysis before analyzing

the range of where that action is, you could, if it's applicable, go through this shorter version of the process.

How it's done is that it's a request. The council makes a request to the Regional Administrator and provides the support and analysis, like, for example, the biological, social, and economic analysis, which will be basically a NEPA, and then this can be done through a categorical exclusion, which are actions -- - It falls within actions that are not, by themselves, significant individually or cumulatively to the human environment, and so the level of analysis that you need is not going to be the same as an EA and an EIS. It's basically a shorter version, because they are not going to be significant. If the Regional Administrator concurs and approves the action, then this action will be implemented through a notice.

This is as opposed to a standard framework, a standard open framework, which is what we traditionally use, and so these are obviously changes that are not going to be significant, and there is also a list of actions that are going to fall within it, and it requires a completed framework document, as you had the opportunity of looking at them, and we have, for example, the AM triggers amendment that is a regulatory amendment, and Bill, I believe, is going to be discussing that one tomorrow.

Now that we have that, we talk about the closed framework, which is, as I said earlier, the action's ecological, economic, and social impacts have already been described in the analysis prepared when the framework measure was adopted. We use this, for example, when we have to implement closures, because the ACL has been exceeded and there is a need to implement accountability measures, and this is done through a temporary rule or a notice.

Obviously, I am not going to discuss all of this, but this is a summary of all of the alternatives, the differences among the different alternatives, that I mentioned to you earlier, and this is something that, once you guys receive your guidance, you will have an opportunity to look at the differences between them.

The most important things that are in here that I think we should know, because you guys are going to make a decision between these alternatives, is that there is the different types of framework processes that I just discussed, and all of them are going to have an open or a closed. You can do a regulatory amendment, or you can continue doing your closures or other measures that can be done through a Federal Register notice.

However, the Alternative 2, which is the base, will give you the opportunity of having a list of actions that can be done through an open abbreviated framework, and I am going to show an example of how those may look in the next slide.

There is also conditions that determine when can an open framework be used, and this differs among the different alternatives. For example, in Alternative 2, one of the conditions for you to be able to use the open framework is there is a new stock assessment or other information indicating that changes should be made or may be needed to the OFL, the ABC, or other associated parameters, or there is new information or circumstances, or there are changes that are required to comply with applicable law or court orders, and these are the conditions that will basically allow you to use the framework mechanisms, as opposed to the regular amendment, to make those changes.

Alternative 3, being the more general one, is just simply saying, in response to any additional information and changed circumstances. Alternative 4, which is the more narrow, only when a new stock assessment or other information indicates that changes need to be made to those parameters. We are basically leaving a couple of things that are a little more general from the narrow.

From here, other differences are, for example, the level of minimum public input, and so Alternative 2 requires public discussion in at least one council meeting. The broad requires public discussion at one council meeting, and the narrow one requires public discussion in at least three council meetings, and these are just minimum requirements.

The council can always decide if they want to have more meetings or they want to have public information meetings or if they want to discuss it in five meetings instead of one, but these are just things that are basically set as minimum requirements.

These are the basic differences among these alternatives, and I want to show an example of some of the draft actions that the focus group for the framework is working with, and this is still a draft. There is a lot of procedural stuff in here, and so we're working with NOAA GC to make sure that the things that are included in here make sense, and so, for example, and I think I am not going to go through all of this, and, most of these things, you already have them in your framework, and that's why we are able to make changes right now.

One of the things that will be very important now is that we -- You guys should be able to specify an ABC and other measures that are related to that ABC that are included in the ABC control rule that is going to be in the FMP, and so if the idea is that -- As Bill was mentioning earlier, there is going to be species that we don't have enough information right now to use the ABC control rule.

If that is the case -- After the SSC meeting in September, we will know better, but, if that is the case, the idea is that, through the standard framework process, once that information is available, you should be able to make those changes and probably move those species or have the SSC be able to respecify an ABC based on the ABC control rule that it's in or other mechanisms that are already in the FMP. Within that, you should be able then to respecify ACLs, because you know that they're associated. Marcos.

MARCOS HANKE: When you mentioned earlier insignificant changes, like putting apart one framework abbreviated versus the other one, who makes that determination, or will it be a list, like the one you are presenting, that will guide us to that?

MARIA LOPEZ: This is your decision, what goes in here or not, and so we're still working with what the things are to be included in the abbreviated framework, but we have a couple of examples of things that we're thinking should be able to be done through an abbreviated framework. The thing is that this should be things that are not going to change -- Jocelyn, correct me if I'm wrong with this, but change the way that the fisheries are prosecuted.

MIGUEL ROLON: I believe that what Marcos is going into is that the frameworks will be designed and developed by the council with the guidance of NMFS. There are certain bookends that you cannot go over, but, as Maria is saying, you need to define "insignificant", because NMFS has to decide whether the management approach using a framework will be approvable or not, and so all of that will be in the discussion before you finalize your decision on what framework to use.

In the past, we have used frameworks for the Reef Fish FMP and others, and you have a set of management measures. If something happens, you have already analyzed that, and the Secretary will do this, from a list of actions that you have of minimum sizes, gears, et cetera. This is what we are addressing here. The only difference from what we have done before and this is that

now we have the open framework, and Maria is --

MARIA LOPEZ: The abbreviated.

MIGUEL ROLON: Yes, the abbreviated. Then, when we get to that point, we will provide you enough elements of judgment for you to decide which one is the most appropriate for the FMP action that you want to address, using a framework.

MARCOS HANKE: Thank you for the clarification. I just want to say that this, in different stages of this process, is something that I request, for the whole system to be more agile and to be able to respond gradually, but quicker, to what we do, and this is something that we should pursue and put attention into and support as a council member.

MARIA LOPEZ: The thing with the abbreviated framework is it's not really like a free-for-all and we're going to be able to do a lot of things. Obviously, this is going to have limitations, and things have to be minor and insignificant, and sometimes, if you have doubts, probably you're going to end up doing a standard framework.

You have to have analysis, and so one of the requirements of the things that you have to provide to the Regional Administrator is supporting documentation about what you're doing, and so obviously this is something very new for us as well, and we are going to be trying to see how we can make sure that we all understand where and when we can use this abbreviated framework.

For example, if there's like a correction that needs to be done to an amendment or something like that, this will be something that an abbreviated framework will help us, instead of having to do a regulatory amendment and meetings and a year to make a simple correction. This will allow us to go ahead and make this change. Miguel.

MIGUEL ROLON: Maria, that's exactly the point of having frameworks. In the past, it was always a discussion, because most councils do not want to use a framework, because they believe that then the control of the management of the fishery rests on the Secretary and the Secretary only, and that was true in some cases, including this council, but not anymore.

We work from the beginning to the end, and so I believe that this is something that will help the council and National Marine Fisheries Service to be more agile in the way that we manage our fisheries, because this is out in the open and everything, and

we have experts at the Regional Office that can help us, and we can trust, let's say, that this will be a better way to approach the fishery management, in some instances, than just have a lengthy amendment of the FMP for everything that you have.

The other consideration that has been included here is the cost. A management plan used to cost anywhere from half-a-million to a million-and-a-half, between the time that you decide to have a plan or not, and also some of the fisheries will need to have these frameworks, because the fishers cannot wait for a year to change a management measure that may benefit them. If you have a framework, then that can be done rather quickly and you don't affect, necessarily, the socioeconomics of the fishery.

CARLOS FARCHETTE: Roy.

ROY CRABTREE: I agree with Miguel that, generally speaking, framework amendments work well, and it does expedite the process. I don't think you really lose any control. I mean, you're still picking the preferred and voting on it, and there still are opportunities for public comment on all of it, but, generally, you can make changes to things more quickly that way, and so I think it's important.

MARIA LOPEZ: If nobody else has any other questions, I am going to -- Bill wants to wrap this up. He has a couple more slides.

BILL ARNOLD: To keep this thing going, we need a couple of things out of this SSC meeting, and the first thing we need is -- While it appears that the SSC and the council are in agreement that indicator species will be used, we need a specific statement from the SSC as to how they recommend that indicator species be used.

I think that everybody understands this, but it has not been stated in a manner that allows us to include it in the fishery management plan, and what we would ideally like is to say that the indicator species will be used to make decisions for the stock complex within which it is embedded, and so, if that's the case, you don't need to identify scalars and scientific uncertainty buffers for every stock in the complex. You only need to do it for the indicator species, because that's the one that you're going to use to track that complex.

You track its landings against the ACL, and, when that species landings exceeds that ACL, an AM is applied to that stock complex. That is a really important decision that has to be made upfront, because, if it's made upfront at the SSC meeting,

it will allow two things. It will allow focus on the indicator species, and it will probably alleviate a lot of these needs to use Alternatives 1 and 2, because now you only need data for the indicator species and you don't need data for every stock in that complex.

Getting data for every stock in the complex, landings data for every stock in the complex, is going to be unlikely. For example, in Puerto Rico, you have an indicator species for triggerfish, and that's queen triggerfish. If you have got landings data for queen triggerfish and you can establish your ABC for that queen triggerfish, then you have accomplished what you need to accomplish for the triggerfish complex.

However, for parrotfish in Puerto Rico, there are no indicator species yet identified, that are on this table anyway, and so, if you want to use indicator species, you might want to identify one for that, and you don't have one for Grouper Unit 5, but, if you have indicator species and you wish to use indicator species, it's going to greatly facilitate this process.

Second, we need guidance on which stocks or complexes should fit into the different alternatives in Action 3. For example, we need a statement that there are no landings data for this stock or complex, and so we have to use Alternative 1 for it. We're not going to set a scalar or whatever for this stock or complex, and so it's got to go into Alternative 2, and that's going to be very important. Again, that should be done upfront at the meeting, so they know which stocks or stock complexes they really have to focus their energy on.

Depending upon these decisions, we need to know the year sequences, and I think they have been established, but we need confirmation from the SSC as to their recommendations as to the year sequences used to populate Action 3, Alternative 2, the time series for those stocks that the control rule is not being used, and then we need recommendations on Action 3, Alternative 2 for that MSY proxy.

Are you going to use the median, or are you going to use the mean of that year sequence, and, also what scientific uncertainty buffer you're going to apply, and, finally, Number 5 up there is you need a choice of scalar and OFL to ABC buffer for Action 3, Alternative 3, for Tiers 4a and 4b. For those ones that are going to go into Tier 4a or 4b, use that process, and the SSC is going to have to identify the scalar and the scientific buffer reduction.

Here is our timeline for all of this. We are here, at this council meeting, and we've done all of this stuff. Now, September 25 to 29, we will have that SSC meeting, and that will finalize Action 2, the indicators, and Action 3 and provide the info to the IPT, which is the group that actually puts together all of the wording in these environmental impact statements and the associated FMPs.

I think, Miguel and council, and you may or may not want to do this, but I think that, during the fall, the intention was to have informational meetings to get the constituents prepared for this, by educating them, so that, when the actual formal public hearings come around in the winter, they have some knowledge and education and can actually provide meaningful input, because we constantly get, from our constituents, that we don't understand this and we're not sure what's going on, but that's your decision as to whether you want to do that or not.

Regardless, during the fall, the IPT will continue the development of the draft environmental impact statements based upon that information from the SSC meeting. At the December 12 and 13 meeting, that's the council meeting, and they will review the outcomes from the July and September SSC meetings.

They will review the first draft of those draft environmental impact statements, and they will, ideally, choose the preferred alternatives for each of the three draft environmental impact statements. In the winter of 2017/2018, December and January and February, the IPT will continue finalizing those public hearing drafts and their associated draft environmental impact statements for the spring council meeting.

The council meeting will be held in April sometime, and the date hasn't been set, and you will review those FMPs, the public hearing drafts, draft environmental impact statements. If no changes are needed, you will approve for public hearings and for the draft environmental impact statement publication, so they can be published and commented upon, because that opens the comment period. During the summer, staff will publish those draft environmental impact statements and receive public comment and hold public hearings. Then we will come back in August of 2018, at the council meeting, and the council -- I am an extreme optimist, but the council will vote to submit these FMPs for secretarial approval.

If this draft timeline holds, and I think it's time for the draft timeline to hold, after I have put up about thirty-eight of them, but let's hold to this one. This is very achievable.

Then we will have these new FMPs in place for the 2019 fishing year, and I think that's a goal that is reasonable and should be accepted by the council and everybody associated with this process, and so, as Larry the Cable Guy says, let's get 'er done.

That's it, and so I would say this, just as a brief suggestion. We also have on the agenda for today the AM triggers and a brief review of the upcoming closures, and I would ask that we postpone that until tomorrow, so that you can get to the Other Business section of today if you want to. I mean, I am not dictating your agenda, but I know that there are important topics in your Other Business phase and people here that want to address that, but I would prefer to be done for today and deal with the other agenda items tomorrow morning, first thing.

MIGUEL ROLON: I believe that you need some wine to relieve your throat, and, Mr. Chairman, if you accept that suggestion, then these two things, Review of Accountability Measures and Update on Regulatory Amendment 6, could be dealt with tomorrow morning. Then we can allow Tony Iarocci to say what he has to say between here and 5:30.

One comment though about the orientation meetings is that, yes, we agree with the orientation meetings, but I conferred with some of the fishers, and they prefer to have that as close as possible to the public hearings, and so they would like to have the orientations probably the first part of 2018.

The reason for that is they keep telling me, Miguel, if you come with all of that information, and then you spend eight months for us to say something at the public hearings, we forget about it, and, also, we will have better information for them after the December meeting, because I will have the document in my hand to say, well, this is what we propose and this is what we are doing, and this is the alphabet soup digested for you, and this is what is expected of the public hearings that will occur in the summer.

We will have that, and usually what we do with the orientation meetings is they are chaired by any council member, and then the staff and Bill will coordinate, so we can prepare these workshops for the fishers.

CARLOS FARCHETTE: Okay. Since nobody has an issue with continuing with the review of AMs and also the Amendment 6 to the Reef Fish FMP, we will move on to Other Business with Tony

Iarocci.

OTHER BUSINESS
LOBSTER MANAGEMENT REPORT

TONY IAROCCI: Thank you, Mr. Chairman. I know it's getting late, but this is pretty important to the lobster fishermen in Puerto Rico. I will just give everybody a quick update. We have done a data collection program. If you remember back a couple of years, I put one together with Tom Matthews, and it's always been a problem getting the data from some of the fishermen, to put the numbers on paper.

This revised data program that we're doing, thanks to Bryan and Ricardo Miranda, we've got a revised data sheet that the fishermen feel comfortable with using, and, while I'm talking about those two guys, I want to really thank them for the work that they've put into this program and congratulate both of them on the two new boats that they brought to Puerto Rico that they're working on multispecies rigs.

From east to west, and I wanted to simplify this, because we did have a lot of confusion of who was doing what and who was going to do what. After coming to the meeting today, I have talked with -- From Carlos Velazquez to Nelson to the fishermen here, and Helena. What we have put together is participants from east to west, ten participants.

We will do it for three months, from September to November, and the data is going to be presented at the December council meeting. We collect the data and put it together. At the end of every month, that data goes to the data collection guy that has been hired to put this stuff together. We start in September, when the season is slow, and we go into where the production picks up into November, and it goes right through. Either we do something like that or we bring in Mekisha, who can put all this stuff together and do it right.

If we put this together and put this -- I have got a list of the participants and the fishermen. The one question that I do have is Nelson Crespo has committed to working in Rincon with the fishermen to make sure the data is done there, and we've got Bryan and Miranda, who is committed to do that with the fishermen in their area, and we've got the revised -- There is the data sheet.

This is the one that we've put together that has a complete dataset that everybody is in agreement. We've got examples that

Bryan and Miranda has put together. From everybody that we've talked to, everybody is in compliance that this is what we should use.

Now, my next question is, if we need to, is there -- Helena had brought this up. If we need to bring somebody in to collect data in the problematic areas -- Now, Carlos, I am going to put you on the spot right here, because we've had a problem in Naguabo, and you know we have, and do we need to have somebody go to Naguabo to gather the data, or can you be responsible for making sure that we get some of the fishermen out of there to fill out these things for three months? That's a question to you.

CARLOS VELAZQUEZ: Tony, now is very confusing for me, but now I send these papers with two fishermen from my village, from the data sheet from Daniel Matos and the laboratory in Mayaguez, but I don't know now -- I don't know if this data sheet from Daniel Matos for two or three months ago -- All data sheets for these two fishermen, I sent them to the laboratory with Daniel Matos to collaborate with the project on the Caribbean lobster. I called Bryan, and I don't know the status, and Miranda didn't know the status, and I talked to Nelson, and Nelson told me that, I don't know, Carlos. For me, it's all confused.

TONY IAROCCI: Okay. That's what I am talking about. That's why I'm addressing this right now, and I hate to do this this late under Other Business, but we need to address this, and we need to do it right. We've got people committed, and I'm not looking backwards now. I am looking forward from today.

A three-month project, where we've got X amount of fishermen from every area that are committed to do this, and from here forward is what I'm talking about, and I want to hear from, if I could, Nelson, if you have comments, or Bryan, because these guys are committed to do this.

We need to do this, and, if we can do this for three months, that's a good pilot project to get this done and have it presented. We've got somebody to collect the data, and we can have it presented at the December council meeting. That's all I want to know, and everybody else is onboard. If we bring Naguabo in, we've got everybody in compliance to do this, and that's all I need, and I want people to commit. Nelson, if you have something to say, and Bryan, please add to this, so we can move on.

NELSON CRESPO: Like I told you in the afternoon, I commit, and

I'm going to take care of my guys. I guarantee that I'm going to find two or three trap fishermen on the west coast, and I'm going to bring the data for you, for the laboratory.

BRYAN --: I already spoke to my fishermen, and they will do the same. We will have the data all together.

TONY IAROCCI: Okay. Is there any questions or any suggestions?

MARCOS HANKE: Watching from outside, and I know about the GPS coordinate problems and so on, but the fishing area, I don't see it there. That is question number one, and question number two is, the way I'm seeing the confusion of Carlos, it's -- Carlos, if you think, because of the back-and-forth on this project, having the -- The grid is on the screen now, and it's clear. I just wanted that clarification. Thank you, Tony.

The question that Tony did to you is that if you need support to collect the data in your area, then maybe, because of the back-and-forth on the project and the delay, you don't have the face to go in front of them and request it, and maybe you don't feel comfortable on that, and maybe they're going to be against the project and lay back the project. If I understand the question correctly, this is what he was asking or offering Carlos, if he needs somebody to do that job, if he thinks it's more effective that way, or if he thinks that he can do it no problem, and I think that's the question that Carlos didn't understand.

TONY IAROCCI: Helena had brought that up, that maybe we need to bring somebody in to do that, and we had talked about that, or if we need somebody to do everything, but everybody else is already committed, and that's why I wanted to make sure that everybody was comfortable. I don't want to put Carlos on the spot, because I know there's been a little confusion through this whole thing.

When we did have a problem, even in the beginning, when I did the project with Tom Matthews, everybody always -- They always say, yes, we're going to do this, but now it's time not to say yes. Now it's time to say let's do this and get it done. We've got three months until the council meeting, and we need this data to be presented at the council meeting, and I want everybody -- We need to have the whole area covered, and that's the focal point right there that needs to be addressed.

MIGUEL ROLON: This is something that is not council business. It's a fishermen's group that decided to do this. At the beginning, it was a little bit of a mess-up, and it was not a

confusion. The only people who were sending the information to the laboratory, which I'm paying a guy to enter to the data, were the people from Naguabo. The other guys were looking for a boat or were looking for something else, but they were doing nothing, and so I'm not going to spend any more money to this project if you guys don't get together and decide what the hell you're going to do with it.

If we take what Tony is saying and forget about the past and have these three months, and a set of fishermen committed, and we will have the picture on the screen, and we will have the new table, and we will have a clean slate, and we will do it, and then the guy at the laboratory in Puerto Rico will be collecting the information.

The reason why we have that person there is that, if we start collecting information and sending it to the Center, sending it to the lab, sending it to the people who are not ready to receive that information, it's kind of cumbersome, and so what we decided to do is to assist the fishers and get the information to the Fishery Research Laboratory, to Daniel Matos, and he has a person there that we're paying to enter the data.

Once that data is entered for the next three months, probably by the end of this year, we will have a better picture as to what is it that we are missing, that we are not collecting, at this time. It will be a fisher project, and you will have to have somebody to analyze it, because, otherwise, what you are going to present to the council is a bunch of numbers that don't mean anything.

Until we have the analysis, and remember that all of this has to be in accordance to the guidance that the Center uses for analyzing the data. You may spend three months collecting data and then the Center will say, well, that's not good for us, because you missed this, this, and that, and so I believe that this table -- Tony was clear with the scientists, and so this table and the commitment will allow us to have this project with the fishers.

If you need more information as to what is it that you need to do, Helena can help the fishers who are in need of that explanation. This is key and important, because the fishers don't trust each other, and they don't trust the messenger, and sometimes, if you don't go to them with clear understanding of what you are trying to say, clear understanding of what -- The fishermen will all cooperate as long as everything is in the open and they understand what is it that you need from them, and

that is true for any projects.

Mr. Chairman, I believe that, with this, we can -- You have until tomorrow, and you can talk about it tonight and tomorrow morning, and, if you need to address anything else, between here and tomorrow, tomorrow at the Other Business, if you have something new, please bring it to the table. If you need any assistance from the council in any way, we will do it, but, again, this is a project that is not a commitment from the council, by the council, but the council is just assisting the group of fishers that are responsibly working toward the betterment of the fishery data that we collect for the spiny lobster and with the assistance of our friends from the north, and I guess this could be a success story, with this project.

TONY IAROCCI: Thank you, Miguel. I think the clarity that you just said -- Now, with Naguabo, and I'm glad that that happened. I think everybody is onboard, and, like I said, I don't want to look to the back, with the confusion and what was done.

If we move this forward with a quick little three-month program -- At the end of the month, the data goes directly, at the end of the month, to the Center, and so, at the end of the month, if they can put the data together, then you've got -- When it's over in November, you've got the month of December to put everything together, and we can peer review and have everything done. At the December council meeting, hopefully we can have a good presentation. Thank you.

CARLOS FARCHETTE: Okay.

DAMARIS DELGADO: I just wanted to say that I talked to Ricardo this morning, and I asked him precisely about this project, and he told me that they aren't receiving enough statistics from the project. They have received data, but not many statistics.

CARLOS FARCHETTE: Carlos.

CARLOS VELAZQUEZ: (Mr. Velazquez's comment was in Spanish and was not transcribed.)

PUBLIC COMMENT PERIOD

CARLOS FARCHETTE: Okay. Thanks, Tony. We have our Public Comment Period. Is there anyone in the public that wants to go to the deponent's microphone and say anything? Then we are going to continue on with the Administrative Matters.

ADMINISTRATIVE MATTERS

MIGUEL ROLON: For Administrative Matters, we have a closed session for one part of the agenda. I covered the part of the budget, and, as I said, we received the budget on time to finish our year, and we don't foresee any problems with the tasks that we have at hand and the funds that we received. Then we can have a closed session, and we are going to discuss issues related to personnel, and it will be only voting council members.

CARLOS FARCHETTE: We will break for a few minutes, and the meeting is in recess until tomorrow. Tomorrow, we will begin at 9:00 a.m. We have got five minutes so that everybody can vacate, except for council members, for the closed session.

(Whereupon, the meeting went into closed session on August 15, 2017.)

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August 16, 2017

WEDNESDAY MORNING SESSION

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The Caribbean Fishery Management Council reconvened at the Courtyard Marriott, Isla Verde, Puerto Rico, Wednesday morning, August 16, 2017, and was called to order by Chairman Carlos Farchette.

CARLOS FARCHETTE: Good morning. We're going to get started in about a minute. I am going to start with a roll call, and we'll start right here on my left.

MARCOS HANKE: Marcos Hanke, Puerto Rico, council member.

DIANA MARTINO: Diana Martino, council staff.

RUTH GOMEZ: Ruth Gomez, USVI, DPNR.

TONY BLANCHARD: Tony Blanchard, St. Thomas/St. John, council.

CARLOS VELAZQUEZ: Carlos Velazquez, council member, commercial sector.

BILL ARNOLD: Bill Arnold, NOAA Fisheries.

GRACIELA GARCIA-MOLINER: Graciela Garcia-Moliner, council staff.

VIVIAN RUIZ: Vivian Ruiz, council staff.

TODD GEDAMKE: Todd Gedamke, Mer Consultants.

MARIA DE LOS A. IRIZARRY: María de los A. Irizarry, council staff.

KATE QUIGLEY: Kate Quigley, council staff.

JEREMY MONTES: Jeremy Montes, U.S. Coast Guard.

BONNIE PONWITH: Bonnie Ponwith, NOAA Fisheries.

JOCELYN D'AMBROSIO: Jocelyn D'Ambrosio, NOAA Office of General Counsel.

ROY CRABTREE: Roy Crabtree, NOAA Fisheries.

MIGUEL ROLON: Miguel Rolon, council staff.

CARLOS FARCHETTE: Carlos Farchette, Council Chair.

MARIA LOPEZ: Maria Lopez, NOAA Fisheries.

RICHARD APPELDOORN: Rich Appeldoorn, SSC Chair.

HOWARD FORBES: Howard Forbes, DPNR Enforcement.

JEFF RADONSKI: Jeff Radonski, NOAA OLE.

LYNN RIOS: Lynn Rios, NOAA OLE.

ALIDA ORTIZ: Alida Ortiz, Outreach and Education Advisory Panel Chairperson.

NELSON CRESPO: Nelson Crespo, DAP Chair, Puerto Rico.

JULIAN MAGRAS: Julian Magras, DAP Chair, St. Thomas/St. John.

TONY IAROCCI: Tony Iarocci, commercial fisherman.

WESSLEY MERTEN: Wessley Merten, Dolphinfish Research Program.

YASMIN VELEZ: Yasmin Velez, Pew Charitable Trusts.

GRISEL RODRIGUEZ: Grisel Rodriguez, DNER.

GRACE HWANG: Grace Hwang, NOAA Office of General Counsel.

NORA SANTANA: Nora Santana, STEM educator.

CHARLOTTE HUDSON: Charlotte Hudson, Lenfest Ocean Program.

TIM ESSINGTON: Tim Essington, University of Washington.

ORIAN TZADIK: Orian Tzadik, Pew Charitable Trusts.

GERALD GREAUX: Gerald Greaux, St. Thomas Fish and Wildlife.

MEKISHA GEORGE: Mekisha George, St. Thomas Fish and Wildlife.

ALFREDO SFEIR: Alfredo Sfeir, Shellcatch.

VIVIAN RUIZ: The Go to Meeting attendees are Cynthia Meyer, Helena Antoun, Nicholas Alvarado, Peter Freeman, and Randy Blankenship and Sarah Stephenson.

EDWARD SCHUSTER: Edward Schuster, DAP Chair, St. Croix.

CARLOS FARCHETTE: Okay. For the continuation of the 160th Caribbean Fishery Management Council meeting, it's August 16, 2017 at the Courtyard Marriott in San Juan, Puerto Rico.

MIGUEL ROLON: Before we proceed, the Commissioner of the Department of Planning and Natural Resources of the Virgin Islands will have an announcement to make at ten o'clock, and so, with the indulgence of the group, we would like to stop whatever we're doing at ten o'clock so she will be allowed to address the council with the announcement that she has to make, and also she will take any questions you may have.

CARLOS FARCHETTE: Okay. Continuing the agenda for yesterday that we did not complete, next is the Review of Accountability Measure-Based Closures for the 2017 Fishing Year, and that's Bill.

REVIEW OF ISLAND-BASED FMPs AND DRAFT EIS STATEMENTS

BILL ARNOLD: I will take care of this, but first I wanted to give a quick summary overview of what I talked about yesterday. I just think that this is so important that it really needs to be emphasized.

What we talked about were the actions that are contained in each of the three new fishery management plans, one for each of the island groups. There are five actions, as I said before, and the first is to determine the species to be included for management, and we're pretty much done with that.

There is one suggestion from the SSC to remove a species from one of the islands, and I had it, but it's way too early in the morning for me, but that's something that the SSC will have to discuss. It was seabream, and that was for St. Thomas. That will have to be discussed, but, otherwise, that's pretty much on track.

Second is stocks and stock complexes for each island group, and the SSC has made tremendous strides with that. I think they're pretty much ready to go, and that will come out as a recommendation following the September 25 meeting, and, as I emphasized yesterday and will emphasize again today, one thing we need is a clear statement from the SSC as to how they intend to use those indicator species, and, as I also emphasized yesterday, that's probably the first decision they need to tackle at this SSC meeting, because it's going to influence everything they do at that meeting following.

Third, we'll talk about the management reference points, and fourth is essential fish habitat, which is largely pretty much a standardized approach that will be presented to the council as alternatives, but I think it's going to be relatively straightforward, and fifth is the framework procedures that Maria talked about yesterday, and we're in good shape with that.

We'll be dealing with GC and putting together a list of appropriate framework measures that are going to give the council the flexibility they need to respond to a constantly changing ecosystem while still maintaining our obligations to the National Environmental Policy Act and the Magnuson-Stevens Act.

Just real quick, for Action 3, which is the core of this whole thing, we've got three alternatives, as I discussed yesterday. The first, we just used the actual reference points that we already have established, and that may be required for some stocks or stock complexes on some islands, simply due to a lack of available data. There is no getting around that. If you don't have the landings data and you don't have biological data to supplement or replace that landings data, then we really can't use either of the other two processes.

Second is apply the exact same process we used in the 2010 and 2011 amendments, and that requires some decisions by the SSC and the council as to how they would go about that, and those decisions include that you have to set a time series. Now, the SSC has set time series, but really only for Alternative 3. They may say that we want to use the exact same time series or other time series, if they're going to use Alternative 2.

Then you have to come up with a maximum sustainable yield proxy. Basically, that is the average of the landings, and it could be the mean and it could be the median, and so "average" is the wrong word. It could be the mean or median of those landings that you use to establish that MSY proxy, and then the OFL comes out of that. In the past, it was equal to the MSY proxy. It doesn't have to be, but that's how it was in those previous amendments, and so, if you're following that faithfully, you would set OFL equal to the MSY proxy.

Then the acceptable biological catch, that's really an SSC determination. Again, in the 2010 and 2011, the ABC was set equal to the OFL. Finally, the annual catch limit and the optimum yield, the ACL is determined by the council based upon how much they want to reduce from the ABC.

In the 2010 and 2011 amendments, and so, historically, what the council did was they did apply percentage reductions to that ABC to get to the ACL, and that's where the reduction took place, and then the council set the OY equal to the ACL, and, again, while none of this is set in stone, that procedure not only was very fluid historically, but it also set us up for some of the subsequent work that the council has done, in particular, what I'll be talking about this next, this AM triggers amendment that allows the use of the total ACL, because that's what is equal to the optimum yield, and one of the obligations of fisheries management is to achieve that optimum yield.

If you have got your total ACL equal to your optimum yield, you have established a very strong base for using the total ACL to guide the application of AMs rather than those sector-specific ACLs. Yes, Miguel.

MIGUEL ROLON: Bill, just to refresh memories, what is OY?

BILL ARNOLD: OY is the optimum yield, and optimum yield doesn't just take into account what the population is capable of sustaining, which is a very key consideration in all of this and something I emphasize constantly.

What we're really managing is the ability of these animal populations to support harvest. To the extent that they can support harvest, we want that harvest to be taken, but we just don't want to extend beyond sustainable harvest, but the optimum yield takes that harvest into account as well as other factors, such as economics and the sociocultural components of the communities, et cetera, et cetera, to say this is optimum from all perspectives, from the perspective of all utilizations of this resource.

Those are decisions that will have to be made for Alternative 2 in Action 3, and then we've also got Alternative 3, which is using the newly-developed ABC control rule, and that's really what it boils down to, and the SSC has been very focused on this, and they have made, again, tremendous strides in getting the input data, defining what the input data are going to be, to populate this ABC control rule that ultimately results in an allowable biological catch.

You inform that ABC control rule as far as the tier allocation, and that's been done by the SSC, the year sequence, and that's been done, but the scalars and the scientific uncertainty buffer are going to be one of their major tasks at this September 25 SSC meeting, and, again, the size of that job is going to be strongly determined by how they intend to use those indicator species.

Then the annual catch limit and optimum yield, again, have to be determined, and that's by the council. What are they going to reduce from to get from the ABC to the ACL? Then, for any of these, if and to what extent -- Not for Alternative 1, really, because that's sort of inherent in it.

You've got the numbers, and this is the number for the recreational sector, and this is the number for the commercial sector, but you don't have that pre-established for Alternative 2 and Alternative 3, and so the council will have to decide if we want to use the same process we've used before or some other process and allocate landings between the two sectors, and that is specific to Puerto Rico, because we don't have recreational data for the USVI yet.

Practical applications, as I discussed yesterday, it's very important, and Alternative 1 is for those for which no landings are available, and, as I said yesterday, you can't partition these out. You've got an ACL that is previously established for a group, like groupers or Snapper Unit 2 or parrotfish.

You can't say, well, we're going to pull out red hind grouper and assign it a separate ACL and then we're going to use that other ACL for all the other grouper, because you're double counting with respect to red hind. You have got their landings somewhere in that total, and then you're pulling out separate landings. I mean, I guess you could do it, but it's really not quite kosher.

Alternative 2, landings are available, and the year sequences have been recommended by the SSC, but no scalar has been recommended, and no scientific uncertainty buffer has been recommended, and so you can't go through the Alternative 3 ABC control rule, because you're missing data inputs, and so you would use Alternative 2.

Then Alternative 3 is the ideal, and that's the one we're striving for. You've got scalars, and you've got scientific uncertainty buffers, and you can take it all the way through that control rule process and get an ABC out the other end, and that's where the SSC will be strongly focused at that September meeting.

The next steps for draft environmental impact statement progress is I would suggest that the agenda for the SSC be constructed somewhat like this. First, make that decision on indicator species, and then guidance on which stock complexes should fit into the different alternatives, and that will really represent, to a large degree, what data are available and also, to some degree, Alternative 2 can't be determined until they see how much progress they have made in the SSC meeting, because, if they're able to assign scalars and scientific uncertainty buffers to everything, Alternative 2 really becomes unnecessary.

Year sequence information to populate Alternative 2, again if it's needed, and recommendations for Action 3, Alternative 2, for the MSY proxy. If you're going to use it, you have to determine whether you're going to use the median or the mean, and also that buffer, that scientific reduction buffer. Finally, most important of all, to identify your scalars and your buffer from OFL to ABC. If you can get that done, again, Alternative 2 doesn't count.

Finally, the timeline for this, we are in the August council meeting, and we'll have the September SSC meeting, and hopefully that will prove very productive, and then, during the fall, we'll also be convening the IPT, which is the group of interdisciplinary planning team that brings all the expertise

together, economic, social, ecological, et cetera, et cetera, to build these public hearing drafts.

Then I guess we won't -- This is important. The informational meetings won't be held until after the December meeting, and so that's one difference in the timeline. Other than that, we'll come back to the December council meeting and review all of the outcomes and put all of this together and finalize the FMPs in the winter.

We will review those in the spring and hold the absolutely essential public comments in the summer. Then hopefully the council, hopefully, hopefully, the council will vote to submit these FMPs at their August meeting, and so, one year from now, we're shooting to get these submitted, and that's the summary, in case anybody has any questions. Otherwise, this part of it I am done with. Thank you.

CARLOS FARCHETTE: Marcos.

MARCOS HANKE: Bill, as we spoke earlier and you asked me to highlight some of the points that we talked about in the grouping of species, I made a little synthesis about the points that I brought to you. I think the grouping can be a tool, but we have to be aware of a few things.

The different gears and the gear-specific needs for each species, once you group them, are obvious, and I am going to use triggerfish, triggerfish that grow different sizes with different sizes of mouths, in terms of the hook-and-line, and where they are in the water column and their behavior and giving you more or less landing of that species.

This is something that the fishermen can help the SSC to characterize those differences very well, and the time of the day they are more active. Some of them are more active or less active during the time of the day for some of the fishery. For example, the yellowtail snapper fishery, don't expect it to be the same activity during the day and the night, once you are fishing for yellowtail, to have -- It's not a generic bottom-fishing approach.

The fishing modality, for example, and I'm talking for Puerto Rico now. Once you have trap fishing, you have the queen trigger fishing there, it's going to be something steady over time that you're going to have that interaction with that gear, but a higher number if you compare it to hook-and-line, because people don't go for triggerfish specifically, but they do catch

them even if they use bigger hooks that are fishing for snappers.

All of that analysis should be taken into consideration in terms of analyzing those landings and the market value of the fish. For example, the gray triggerfish in Puerto Rico is not as valuable as it is in Miami. Here, the queen triggerfish is the -- I am talking for Puerto Rico now. You have the smaller triggerfish, and I forgot the scientific name, but the black triggerfish -- Anyway, this is something that maybe is a resource that, because of sustainable, good practices, we want to divert effort to it. If you put everybody together, maybe you are going to restrain our ability of reacting and create scenarios that are good for managing, and that's one concern that I have.

Different habitats that those fish are on -- If you have a not directed fishery for hook-and-line fishing for whatever species, but those fish are more abundant in other habitats that we don't monitor or we don't have the landings out of it, and this is something to consider, in terms of abundance of that species on the environment.

The behavior of those fish, the oceanic or the gray triggerfish, they are more willing to come to the surface on the chum or even once you are trolling slow with ballyhoo or live bait. They chase your bait, and they come from offshore drifters to you, and that is not the case for the queen triggerfish, for example.

I am concerned also with the mixing of filefish, queen triggerfish, and gray triggerfish, because the filefish are even more different than the triggerfish, especially in terms of all the aspects that I discussed, and something that I think is very important is, even if you group whatever, and I used triggerfish as an example, we have to keep collecting a species-specific information and not a grouping information.

Those are the concerns that I spoke about earlier, and I am available to help, like any other fisher, and I know that we can do a good job advising of those interactions and the meaning of those landings for the different gears and the different areas of Puerto Rico, and this is the time for the fishing industry to step to the plate to help the SSC, once you decide what to do. Thank you.

MIGUEL ROLON: The mechanism here, Marcos, is that we're going to send this portion of your intervention to the SSC when we have the verbatim transcript. We have enough time, and so

Graciela wanted to make sure that we had that, but this meeting is very important, and we want the SSC to work, to let them work and figure it out. At the December meeting, we may have an opportunity to look at this.

We also have the three Chairs, Nelson, Julian, and Eddie, present, and so they can bring to the attention of the SSC any of these other topics, and they have done so in the past, and so we will do that. Also, if you, after the meeting, think about something else, please send us an email, so we will make sure to convey that to the SSC.

One question that we may ask the SSC is what is an index fish for Puerto Rico doesn't necessarily have to be the same index fish for St. Croix or St. Thomas/St. John. For example, in the case of the queen triggerfish, it's very abundant in the U.S. Virgin Islands, so much so that it's almost the fish of the island. In the case of Puerto Rico, on the north coast, the gray triggerfish is more abundant than the queen, and so the index will be the gray and not the queen, and those things have to be considered by the SSC and, if they can break it by islands, that's the way to go, but this is not a one-shot deal.

The SSC will prepare this document for the December meeting. However, this a live document, and so, whenever we have more information, and this is probably part of the framework and I don't know, but it could be included. As we get more information, this could be changed, and an example of that is that we used to group all of the groupers into one group, and we called it the grouper group, and the red hind -- We found that we had a lot of information about the red hind, and you penalize other species, or you penalize the red hind, if you put them all together for the same management measures.

Anyway, all of that will be included at the December meeting, and, Bill, I have a question on logistics. This December meeting will be crucial to whatever we're going to do, and so I was thinking that, rather than have an agenda with all the presentations and talking about whatever we can think, maybe we should devote that entire meeting, or a large percentage of that meeting, just to devote our time to go through this document and then have the council go part-by-part, section-by-section, to make sure that we all understand what we are going to convey to the public as our preferred alternatives, or not preferred alternatives, but the alternatives that we have.

If we agree, then the Chair and I will talk to Bill and make sure that we have ample time to discuss this in the December

agenda. Also, I need to announce that the December meeting will be followed by another meeting that was an idea that was brought to us by Bill, and we have the decision makers -- We'll have sort of a workshop.

I would like to see -- First, to tell them that this is happening, and this is going to affect the livelihood of the U.S. Virgin Islands and Puerto Rico for the next decades, and so I would like to see the reaction and how they see themselves in the next five or ten years in managing with us the fisheries that are the responsibility of both the local governments of Puerto Rico and the Virgin Islands, and we will invite the secretaries and the commissioners and people from the legislature in the Virgin Islands and the key players from Puerto Rico, the legislative people.

That's what we suggest, and so, if you all agree by not saying anything, then we will work with the Regional Office to make sure that we have ample time to discuss this for the December meeting.

MARCOS HANKE: Just for the record, I agree, and I think it's a good idea, Miguel.

MIGUEL ROLON: Thank you, Marcos.

CARLOS FARCHETTE: Okay. Before I go any further, we have the Commissioner of DNER here, for the record. I think she brought her LEO with her.

DAMARIS DELGADO: I have Sergeant Haydelin Ronda, and she works for the Rangers, and she is not a commissioner, but she's a very good representation of him. He had to excuse himself, and he had a meeting, an important meeting, in Ponce today, and so she will be providing our report on enforcement. Thank you.

CARLOS FARCHETTE: I have a quick question, Bill. When I heard you talk about -- Maybe I need to leave this for the December meeting, but just let me put it out and we will discuss it then. When you talk about not being able to pull out a species like red hind from the grouper complex, like in the St. Croix DAP's recommendation and species grouping, or species complex, and let me use snapper.

If we have an indicator species like silk snapper, what are we going do if they decide to use indicator species? Are we going to use the total ACL for that complex and then have silk snapper be that ACL? Am I going right, or am I just confused?

BILL ARNOLD: Not quite, Carlos. The data we had available to us when we developed these 2010 and 2011 amendments for Puerto Rico and the Virgin Islands was largely group data, and so, except for the snappers in Puerto Rico and individual groups, like spiny lobster and queen conch, all we could say was we've got this pile of fish that are reported as groupers, and we don't even know what species are in that pile of fish, but we just know they're reporting them as groupers, because that's how they reported them. It's a grouper, and it's not a red hind, and it's not a yellowmouth. It's nothing. It's just a grouper.

You don't know what was in that pile, and you don't know how much any particular species contributed to that pile, and so even though now, for some of the species that you manage as grouper, you may have individual landings, if there are other species for which you don't have any landings, and so you can't use Alternative 2 or Alternative 3 and develop ABCs, but you've just to use those previously established reference points, and those reference points are based upon all groupers.

If you take some groupers out of that pile and then use their separate landings, and you still take that giant ACL and apply it to a smaller group of groupers, then you have given them a much larger ACL than they should have.

Now, "should have" is sort of a -- It may be a bit of a value judgment, and maybe the council decides that's what they want to do, but you're going to end up with -- Say you've got this grouper pile that's 100,000 pounds and then you pull out red hind that is 15,000 pounds. Now, instead of having a total grouper ACL of 100,000 pounds, you've got a total grouper ACL of 115,000 pounds, the 100,000 pounds that you assigned all of these guys and the 15,000 pounds that you assigned to red hind.

Of course, it's not going to be 15,000 pounds for red hind. It's probably going to be more like 60,000 or 70,000 pounds, but you still have the 100,000, or, actually, if we're talking St. Thomas/St. John, I think it's around 65,000. Then you've got the red hind, and, if you pull out four or five different stocks and you assign their individual ACLs, but you've still got this composite ACL that is very large, you're reducing the number of species in there, but you're not reducing the ACL accordingly. You are keeping that ACL at that size.

Now, again your total ACL for all groupers is actually expanding. It's not my decision as to whether that happens, but you need to be very careful, and I think that you may find that

the Science Center, who has to say what's contained in these FMPs is the best available science, they may say that this really isn't the best available science, because you're double-counting.

That is what I am talking about when I say you have to use the entire ACL and you have to put all the species in that ACL, unless you can pull everything out in one way or another. Now, say you've got ten groupers in that pile that created that ACL. You may not have landings data for all of them, but, if you've split them into four complexes and you have landings data for an indicator for each of those four complexes, you can then use the data for the indicator and track it that way and get rid of that composite ACL.

You can do that, and so you don't need 100 percent landings, and that's why I'm stressing how are we going to use the indicators, because, if you're going to use the indicators that way, that's all you have to focus on. As I said, we would still track, and this is one of Marcos's concerns, but we would still get as much data as we can, and we would still track the data for all the species for which we have data, to make sure that nothing crazy is going on, even if we're only using the indicator to determine what our management response, if any, needs to be, and so that's how the indicator is used.

That is why I am saying that hopefully we'll be able to identify the number of species necessary to assign a management methodology to every stock or stock complex, even if we don't have data for every stock that comprises any one of those stock complexes, and so that's -- But I won't know that until we all get together in that SSC meeting and the Science Center comes in and says here's the data and the SSC says here's how we can use it and this is what we're going to do and then here are the ones that are left over that we do not have landings for or we do not have an indicator species for.

They're orphans sitting out there, and we're going to have to deal with those, and, since you can't use Alternative 2 for those, and you can't use Alternative 3 for this, and we have to assign reference points, you're going to have to go back and use Alternative 1, and now we're back to that point where you've got your composite ACL and you're going to have to deal with it accordingly. You may find that a couple of species drag a lot of other species with them into that composite ACL. It's not ideal, but possibly necessary.

CARLOS FARCHETTE: Marcos, did you want to --

MARCOS HANKE: Maybe this discussion is getting too deep too early, but just a point of clarification. What you're saying is that if I have those ten groupers and you have red hind in there that I cannot pull it apart, because -- I mean, if I pull it apart, it's going to double-count, and it's going to increase the ACL, but, if I drag two fish with him and create another complex, that effect will not happen? This is where I got lost.

BILL ARNOLD: First, I would say that we shouldn't get too deep into this, because it won't be a concern until we come out the other end of that SSC meeting.

MARCOS HANKE: Just the procedure is my --

BILL ARNOLD: If you have landings for red hind, and you're using an old ACL that embedded those landings for red hind in there and now you've got your red hind data that created that composite ACL, and you've got your separate red hind data that is creating the separate ACL, that's where the double-counting comes into play, because you've still got red hind embedded in that original ACL, plus you've got red hind here, and so you're double-counting red hind.

CARLOS FARCHETTE: Okay. We're going to move forward. I've got some more questions, but I will wait for the December meeting.

BILL ARNOLD: You don't have to wait for the December meeting, Carlos. We're going to put this information package together and try to get this as clearly spelled out as possible, but you know my number, and never hesitate to call and we can talk this stuff over.

CARLOS FARCHETTE: Okay. Thanks. I have questions on exports and all this stuff, but that's --

MIGUEL ROLON: The key to the whole thing is what we decided yesterday, that staff will prepare guidelines for you for the discussion at the December meeting, and we have the offer of Bill's cellphone, and so, if you have any questions between here and December -- I'm sure that, if you pay attention, you will have a lot of questions, and then we can have a set of answers for you that could be shared among all the council members.

That way, when we get to December, we will be better prepared, I believe, for the discussion, and that's why I thought it was so important that we should have the entire meeting or, if not the entire meeting, a large percentage of the meeting dedicated to

this exercise.

CARLOS FARCHETTE: Okay. Bill.

UPDATE ON REGULATORY AMENDMENT 6 TO THE REEF FISH FISHERY MANAGEMENT PLAN: TRIGGERING ACCOUNTABILITY MEASURES IN THE PUERTO RICO EXCLUSIVE ECONOMIC ZONE

BILL ARNOLD: The next two presentations are just quick, I promise. They're informational presentations. The first one is on Regulatory Amendment 6. This is our AM triggers amendment. The idea here is when do you trigger the application of accountability measures.

Presently, if one of the sectors exceeds their ACL, then an AM is applied to that sector regardless of whether the total ACL, which equals the optimum yield, has been exceeded. This amendment will require that at least one sector have exceeded its ACL and that total ACL has been exceeded, and so we've exceeded optimum yield. If you don't exceed optimum yield, if you don't exceed that total ACL, even if a sector exceeded its ACL, no AM will be applied.

I just wanted to let you know where we are on that, and so we are just about done and ready to submit this thing. The council has approved it, and we're about ready to submit it for public comment, and then hopefully this fall we will get it transmitted and approved by the Secretary of Commerce and the final rule would become effective in December of 2017. That's important, because what we're shooting for is that this new process be applied in 2018.

The bottom line on this is the rule should be in effect in time for the 2018 fishing season, and it only applies to Puerto Rico commercial and recreational, because, as you know, that's all we have recreational data for. In the future, as we develop our Marine Recreational Information Program for the USVI, we will start acquiring recreational data for the USVI and start hopefully -- I'm a hopeful kind of guy, but start applying separate sector management in the USVI as well.

Again, and this is very important, the sector-specific AM implications will remain the same. Once an accountability measure is applied, everything is going to be the same for the AM, until it's changed by the council, and the method of applying that AM and the implications of that AM, and so that's it. That's the Regulatory Amendment 6, just a quick update.

REVIEW OF ACCOUNTABILITY-BASED CLOSURES FOR THE 2017 FISHING YEAR

Then the last one, of course, is the bad news, and this is the closures that are rapidly approaching, all for Puerto Rico. There are no AM-based closures for the USVI in 2017. These are the 2017 closures, and most of them, two of them, are still based upon the December 31 start date, for reasons that I don't want to go into, and one of them took almost the entire year, but most of them are using that new September 30 closure date, and so they will reopen this year.

This is them, a quick list. Triggerfish and filefish will close on August 13, and so that was two days ago, and it is now closed. It will reopen on October 1 at 12:01 a.m. Commercial and recreational spiny lobster, which is a combined group, closes on September 7 and remains closed until October 1. Snapper Unit 2 closes on September 15, all in federal waters, and this is strictly EEZ closures, and that closes on September 15, and it also reopens on October 1.

Recreational triggerfish and filefish closes on the 18th, and it reopens on October 1. Recreational harvest of jacks closes on September 28 and reopens on October 1, and so two days, and I have received some constituent complaints about why in the world are you closing for two days, but this is -- The way the data works out, this is what the rules are, and this is a nation of rules and laws, and, if you don't abide by them, then it starts breaking down, because, if two days is not long enough, then what about seven days versus fourteen days, and when does it become an adequate closure period to make it make sense, and so this is what they're going to be.

Then recreational parrotfish closes on November 4, but, very importantly, this stays closed until January 1, and so recreational harvest of parrotfish in Puerto Rico, once it closes on the 4th of November, it will stay closed, and keep in mind that recreational harvest of wrasses in federal waters of Puerto Rico has been closed, and will continue to be closed, again, until January 1 of 2018, and that's all I've got, and so, unless you have questions, I am done.

MIGUEL ROLON: Also, for information, we sent the announcement that was sent to us by the National Marine Fisheries Service and distributed it for these closures.

CARLOS FARCHETTE: Blanchard.

TONY BLANCHARD: I've got a question, and it might sound a little stupid, but I'm going to ask it anyway. I am looking at the spiny lobster for Puerto Rico, and when Richard was giving the data yesterday, his presentation, he was saying it's more than likely that the spiny lobster ACL would be raised, and correct me if I'm wrong, Rich.

Why is it that the information is pointing in the direction that we could raise the ACL, that that's basically what is going to happen, but we're shutting down Puerto Rico and the lobster fishery? I mean, one contradicts the other, and I understand the process that we have to go through, but, once again, if you're going down the wrong road and you realize you're going down the wrong road, it don't make no sense to keep going down the road. We need to get off that road and get on the right road, and so the question is this. Is there any way around not closing the lobsters for Puerto Rico, legally?

CARLOS FARCHETTE: Roy.

ROY CRABTREE: Given that it closes in just a few weeks, I don't think, even if we tried to do something, that we would have time enough to get it done. Now, if we get down the path on the island-based amendments and make good progress, we can time out when the effective date of these increases would be, Bill, and I'm guessing the implementation of the island-based amendments would be, at the earliest, at the end of next year, when we would get to a final rule.

You could come in, potentially, to our spring meeting and, if everything is there, you could say that you have new information indicating that you can raise the ACL for spiny lobster, and you could potentially ask for an emergency rule at that point to head off the closure, maybe.

We would have to talk to the attorneys and see how that goes, but, assuming the SSC stays on the course they're on and gives us a new catch level recommendation, we would have new information, but, even if we tried to do an emergency rule right now, I have never seen -- I don't think there's enough time to get one done before this closure, and so I guess the answer is, for this year, no. For next year, yes, but we need to think about this further ahead of time and not wait until our August meeting next year, because then we'll be in the same boat again.

CARLOS FARCHETTE: Blanchard.

TONY BLANCHARD: Okay, because the point I was trying to make is

you remember when there was the issue with Puerto Rico and the sea cucumbers? We shut that fishery down in one day. Correct?

ROY CRABTREE: No.

TONY BLANCHARD: We made that decision in one day to shut it down.

ROY CRABTREE: We have never done an emergency rule or anything to shut sea cucumbers down in federal waters. We talked about it, but we didn't do it, right, Bill? Help me remember exactly what happened.

BILL ARNOLD: The council didn't do anything. The state closed their waters to sea cucumber harvest. The feds didn't do anything.

MIGUEL ROLON: Let me clarify something for everybody. The local authorities in Puerto Rico and the Virgin Islands can act like that. They can have an executive order and tomorrow everything is closed. In the case of the federal government, emergency action will take probably a year, from half-a-year to a year, and also you have to justify an emergency.

When we started emergency actions, the people in Washington told us an emergency action is an airplane crash, and there are no emergency actions in fisheries, and so we have to justify the whole thing in order for us to have that emergency, and that's why it's so important that we get these island FMPs approved as soon as possible. Otherwise, we will be penalizing the fishermen over and over again.

In the case of the spiny lobster, we all know that there is not a big problem with the spiny lobster. However, when we tried to change it, the ACL, at a meeting that was held in Mayaguez a year ago, Bill and I were on the email trying to figure out a way that we can convey the information to the Center in time for them to recommend an increase in the ACL, and we couldn't do it, because the information that we collected from Puerto Rico was within the variance that the Center had for addressing the issue of determining the ACL for the spiny lobster, and that's why we ended up with a closure.

We are in the same boat here, unfortunately, and if, for example, we approve the previous amendment to consider both sectors in order for us to have an AM, once we have an overage of the ACL, and we had a lot of lobster caught by the recreational and the commercial sector, and we may have a

chance, but, in this case, until we finish the process of collecting the information and sending it to the Center -- The Center will bless it, that this is the best available information, and then we can come back to the SSC and raise the ACL, but Roy is more optimistic than me. I think that 2018 is a maybe for the spiny lobster closures.

CARLOS FARCHETTE: Blanchard.

TONY BLANCHARD: Let me ask you this question. Is there any way that we could just forget about penalizing them for the lobsters and without touching the ACL? We leave the ACL the same, but just give them a pass on the lobsters for this year and, next year, we will deal with that, and is there any way around that?

ROY CRABTREE: Not that I can see for this year. I mean, we have already announced the closures and all in the federal register, and so it's already done for this year, and so I just don't see a way around that, given the timing, but I do think, if things unfold and the SSC officially gives us catch level recommendations for spiny lobsters and some other thing, then we can come back in, and we can talk about this again in December, but we can try to figure out a path for next year to put those in.

It might be possible, Bill, that we could do a framework action and implement the new ACL along with moving forward with the island-specific plans, and so there are a couple of ways we could look at trying to get the ACL increases put in place to head off closures next year, either a framework or an emergency action of some sort.

CARLOS FARCHETTE: Bill.

BILL ARNOLD: Three things. First, we don't know what the new ACL is going to be. It has not been established. What Richard presented was an example using spiny lobster. After the September 25 SSC meeting, we may have that information. I can't promise that, and I don't think Richard would necessarily be comfortable promising that. We certainly hope for it, but let's see how the meeting goes.

Second, based upon the three-year average we used, that ACL established for spiny lobster in Puerto Rico has already been exceeded. There is no going back and un-exceeding it, and so, based upon congressional mandate, we have to close the fishery, and that's what we're doing.

Third, the three-year average that's going to be used to make this determination for 2018 has not been calculated yet. Spiny lobster may not exceed the ACL, and there may be no need for a closure in 2018, and so we should wait on that before we start getting concerned, because, if the average three-year landings come in below the ACL, we won't even be having this conversation. There will be no closure scheduled for 2018.

As I'm sure Tony knows, I sympathize greatly with the situation. You're coming in with an average carapace length of four inches, which is an inch over what they get in the Florida Keys, which, as Tony will be happy to tell you, is a great, highly-productive, and very successful fishery, and so you've already got a three-and-a-half-inch, which is a half-inch bigger than the mainland, and you're coming in a half-inch above that.

It's hard to argue that the spiny lobster population, and not fishery, but population, in Puerto Rico waters is not doing very well. Nevertheless, as I said earlier, and, as much as this may frustrate you, it's a nation of laws, and this is a law. This is the rule we have in place, and we must abide by it until it gets changed.

ROY CRABTREE: By December, we hopefully will have something definitive from the SSC, or at least that's what we're hoping for. Will we be able to evaluate where the three-year average looks like it's heading by then, or will that have to wait until the spring, do you think?

BILL ARNOLD: Roy, as you know, that's out of my hands. It depends upon when we get those data.

ROY CRABTREE: So it's a maybe?

BILL ARNOLD: The data, in this case, from Puerto Rico, and the problem we had last year, for determining 2017 closures for Puerto Rico, was not the data itself. It was getting the expansion factors calculated, and that really reflected a big of an overwhelming situation at the lab.

ROY CRABTREE: I think the point is, when we get to the December meeting, we hopefully will have something more concrete, in terms of where we're going with this, and then we can talk about next year and what kind of action we could take.

I am with you that, assuming the SSC provides an ABC to us that's consistent with the example, that we wouldn't want this fishery to needlessly close next year, and we just need to

figure out what's the most expedient way to head that off, whether it's a framework action or an emergency action of some sort, but it seems to me that we're not going to really know for sure until we get to the December meeting, and so I think we need to flag this on the agenda, that we talk about the timing of all of this and what action we can take for next year.

We may get a number of ABCs from the SSC that show some things need to be changed, and some may be lower and some may be higher, and so it may be a mixed bag of things, but we'll just have to sort it out in December, but I am, in principle, in agreement with you that we don't want to have any closures occur unless there is a reason why they need to occur.

CARLOS FARCHETTE: Velazquez.

CARLOS VELAZQUEZ: (Mr. Velazquez's question was in Spanish and was not transcribed.)

MIGUEL ROLON: In nutshell, he believes that, perhaps with the data that the fishermen will be collecting and sending to the laboratory, we might be able to influence the way that the ACL will behave.

The other thing that I was going to tell Damaris that what are the last three years that we can use for next years, 2016, 2015, and 2014? I don't think that we have that information from Puerto Rico. They were behind a year-and-a-half, according to Ricardo, and just so that Damaris can make a note and put some fire under the chairs of some people, so they can hurry up with the information, because, otherwise, we won't be able to know where we're at at the December meeting. Mr. Chairman, we have a lot to cover today, and we have ten o'clock, and are we ready with the Commissioner?

CARLOS FARCHETTE: Not yet. Jocelyn.

JOCELYN D'AMBROSIO: The only thing I would add is that, at the December meeting, someone from my office, whether it's me or if Iris is back, but we will provide additional advice on legally what options you have when you have that additional information about whether or not the ACL should increase and how to handle that, whether it's an emergency rule or -- I think, as Miguel has sort of alluded to, we would need to evaluate whether that meets the requirements under the Magnuson-Stevens Act for an emergency rule or whether there is other options, such as a framework, as Roy mentioned, to address this, but that would be a question that we'll be able to speak to at the next meeting,

doing a little more research on legally what the options are, assuming you have that additional information.

CARLOS FARCHETTE: Okay. We're going to see if the Commissioner has logged on to Go to Meeting and have her -- We will do a quick, five-minute break, just in case, but hurry back.

(Whereupon, a brief recess was taken.)

CARLOS FARCHETTE: All right. Let's get back to the table. We have the Commissioner of Planning and Natural Resources on standby. Good morning, Commissioner.

UPDATE ON USVI FISH TRAP REDUCTION PROGRAM

DAWN HENRY: Good morning, Mr. Chairman, and good morning to the other council members and to all present. I am glad for you allowing me to have this opportunity to give an update on the Virgin Islands Fish Trap Reduction Program. I just wanted to advise the council that the department did submit the rules and regulations to the Office of the Governor for promulgation.

They did have two minor edits to the regulations which the department did, and they were resubmitted this morning, and the expectation is that the Governor should sign the rules and regulations by the end of the week, and so I am requesting that the council continue to indulge the department and allow for us to have an additional week, just to make sure that we have enough time, because, after the Governor, the Lieutenant Governor has to attest to his signature, and then that will end the process.

We are very hopeful and confident that by the end of next week that we should have a final document in the department that will be the rules regarding the U.S. fish trap reduction within the territory.

CARLOS FARCHETTE: Thank you, Commissioner. Any questions for Commissioner Henry? Roy.

ROY CRABTREE: Not a question, but I just wanted to thank the Commissioner and the Governor. This is certainly good news, and I know that a lot of people have worked quite a while, and so I am very happy to hear that the Governor and the department are moving forward with this, and so that's great.

DAWN HENRY: Thank you. We definitely -- As with any process, at times, it doesn't go the way that you initially hoped, but we

are definitely in the last stages of getting this done, and we will have it done by the end of next week. Again, thank you to my fellow council members, and I hope you guys have a productive final day in discussing the important issues that deal with our fisheries.

CARLOS FARCHETTE: Thank you, Commissioner. Anyone else? Bill.

BILL ARNOLD: What this means to the council is you can now consider implementing a similar trap reduction for federal waters surrounding either or both of St. Thomas/St. John and St. Croix, and that should be looked upon as an amendment to the new island-based FMPs, yet another reason why we need to get these FMPs done.

CARLOS FARCHETTE: Thanks, Bill. Good. We will be working on compatible regulations for federal and the local plan. Okay.

DAWN HENRY: Yes, and I do agree with that point, in that our regulations, as was pointed out, they specifically just speak to territorial waters, and so I do agree, for us to be compatible, that something would need to be done in the federal waters as well.

CARLOS FARCHETTE: Okay. Bill.

BILL ARNOLD: Specifically to Commissioner Henry, this is one of the key reasons why we want to have this meeting in December associated with the council meeting and to have both the Secretary for Puerto Rico and the Commissioner for the USVI in attendance, so that we can discuss and strategize for these sorts of things, and so I know that your schedule, Commissioner Henry, is extremely busy, but I certainly hope that you are able to attend that meeting that will be in St. Thomas, I believe. Thanks, you guys.

DAWN HENRY: It's going to be in St. Thomas?

MIGUEL ROLON: Yes, the 14th of December.

DAWN HENRY: Okay. I will definitely do my best to attend.

CARLOS FARCHETTE: Okay. Anything else? Hearing none, thank you, Commissioner.

DAWN HENRY: Thank you so much.

CARLOS FARCHETTE: Did you want to say something?

REVIEW OF ACCOUNTABILITY MEASURE-BASED CLOSURES FOR THE 2017 FISHING YEAR (CONTINUED)

ROY CRABTREE: I would. I would like to follow up on Mr. Blanchard's comments before the break. **I would like to make a motion, and my motion would be to place on the agenda for the December meeting final action on a framework action to make expedited changes to ACLs for 2018.**

TONY BLANCHARD: Second.

ROY CRABTREE: What we'll do, if this motion is approved by the council, is we'll see what transpires with the SSC. If they give us new catch level recommendations, then our staff and council staff will go ahead and start drafting a framework action to make changes on these, and then we'll come back to the December meeting and have that in front of the council and take public comment on it at that time, and we could approve it.

That would give us time to get those changes implemented in late spring some time, but likely before any sorts of closures take place, and I anticipate this will be not necessarily just spiny lobster, but it could be a suite of species for which changes need to be implemented. That way, we could avoid the complications of an emergency action and go through the more regular process.

CARLOS FARCHETTE: Any further discussion on that? Let me read the motion. The motion is to place on the agenda for the December meeting final action on a framework action to make expedited changes to ACLs for 2018. Motion by Roy Crabtree, and seconded by Tony Blanchard, and is there any further discussion? Hearing none, we will go a vote. **All in favor say aye; any nays; any abstentions. Hearing none, the motion carries.**

Thank you, Tony. You just saved the Puerto Rico fisheries from accountability measures for next year.

MIGUEL ROLON: Actually, no. Be careful what you say on the record, because, at the end, you may have a longer season closure in 2018. The only thing that we're doing now is giving a chance to the scientists and the local government to bring the information to the table so that we can make a decision next year. Bill, do we need to have anything regarding the trap reduction program measure for the EEZ between here and December, or we don't have to do anything until December?

BILL ARNOLD: No, it's too soon for that.

MIGUEL ROLON: Okay.

CARLOS FARCHETTE: Okay. Next on the agenda is Update on the Commercial Port Sampling Landings Validation Project by Todd Gedamke.

MIGUEL ROLON: Before Todd Gedamke -- Most people don't know him, but Todd has a long history as a fisherman in the area. Then he went back to the university and got his degree in stock assessment, and he worked with the Southeast Fisheries Science Center for several years, and now he's a private consultant.

His project is a project to look at the statistics and the betterment of the statistics for the fishery program of the U.S. Virgin Islands and Puerto Rico that can be used by the local governments and the federal government at future dates, and so, Todd. Todd, would you like to finish your presentation and then take questions, or do you want people to ask questions while you're doing the presentation?

UPDATE ON THE COMMERCIAL PORT SAMPLING LANDINGS VALIDATION PROJECT

TODD GEDAMKE: Why don't we go through the presentation and then ask questions after. First of all, as you just mentioned, I'm going to give a little background on the commercial landings port sampling program that we've been working on, and I just wanted to start with a couple of slides of background.

This is a quote from I believe Joe Kimmel in 2010 from the Data Improvement Workshop, which is the origin of the funding for the research that we're doing now, and he was a little surprised, after spending much of his life working in the Caribbean, that all of a sudden there was all of this attention.

I don't need to remind this council of the reason that all of this attention began. I don't need to remind this council of the ACLs, but one thing I do want to remind people of and what I have been reminding people of as I've been talking about this recently, is that the basis of this is MSY, and, in an ideal world, if the science works and we have all the information we need, we're striving for achieving maximum sustainable yield, which, over the long term, gives the longest long-term average catch that is the largest possible over the long term.

I think this is important to remind people, because we end up

with a lot of discussions as to what the regulations are doing, but keep in mind, if we have the information we need and we strive towards ACL, it provides the best situation for the fishers and the resource, but, unfortunately, as many of you know, the situation in the Caribbean has been challenging.

People have been extremely frustrated with forty years of data collection, and we have had real challenges come up with quantitative stock assessments, which is why we pulled together, in 2009, the Data Improvement Project.

The committee report resulted in the funding for the project we're doing now, and I just want to point out that the majority of the panel that were involved in this, making the recommendations, were representatives from Puerto Rico, the USVI fishers, and the DNER and DRNA staff, and port sampling was a top-priority recommendation.

At this time, there was an extreme amount of frustration, and I bought a t-shirt from the STFA at that time, and, for those of you that might remember it, it looked like this. Bonnie Ponwith, when I showed up at the office, was not exactly happy with me, because, on the back, it says, "There is an appearance among fishermen that the federal government is being heavy-handed. The current level of mistrust between the industry and NMFS is now at all-time high. We believe that it's important that the office investigate and give this matter the immediate attention that it deserves."

This was just a little highlight, at the time, of some of the conflict that we were having, and there was a lot of strides made then to try to get everyone to begin to work together. Tony Iarocci was brought down to begin to talk to the fishermen, and, over seven years, we worked very, very well by getting together and working on some of this progress.

Unfortunately, recently, we have had some more challenges with people operating and some of the real mistrust that has been occurring again, and so, a few months back, I presented the basis of this presentation to the MREP meeting, which is a Marine Educational meeting, and, at the end of the meeting, Miguel asked me if I could provide an update to this council that summarizes what I talked about at that meeting.

I told Miguel that I would remove my introduction, which was a little bit of storytelling and a little bit of some background that is a little too casual for my taste to present to this council, and Miguel told me that, no, you need to keep that in

there, and that story is part of this, and so I'm going to start out with a little bit of background on me, because one of the main things in the criticisms that I get, and many of the scientists get, is that all we've done is we've been locked in an office our entire lives and we have no idea what's going on on the water, and that's not me.

I have spent most of my life on the water, and I have about 3,000 days of days-at-sea, and I think it's important for the people to realize that those that are working on some of the analyses are not just those that have lived in the office, and so bear with me as I go through a little background.

I'm going to weave in the work that we've done here, and so I basically started my work, my training in this field, in update New York, and I put this wonderful picture of me up in the corner to make people look -- If I put a picture of me in a Speedo up there, you should be willing to interrupt me and ask questions, to try to loosen up the room a little bit, but I started out as a doctor, and I realized that that's not what I wanted to do, and I dropped out of school and went sailing for a year, which, those of you that know, I am back in that part of the sailing in my life, but I realized that I wanted to work on the water.

Working in the Caribbean and doing that work has been something I have loved all my life, but I got out of school and did a lot of work in aquariums, and then I got my real exposure to working in the commercial fisheries. I got a job working as an observer up in Alaska, and my eyes were wide open in looking at what was going on up there.

I got sent up there to Dutch Harbor, and I got on this boat, and I stepped onboard and I asked the captain how long the trip was going to be, and he told me forty-two days. My eyes opened up, and this was basically my first day out there, and I got a little wide open to what the world of commercial fishing is and how difficult and challenging it can be.

This is just a longline boat, and it really made me realize that I was the person doing science onboard this boat. The birds that are behind this boat -- One of these is there's an albatross in this group, and I realized that if we caught one of these albatross that I was going to be the guy that had to report it and shut down the fishery, and it was the first time in my life that I realized that there can be real conflict working with commercial fisheries and science.

No one was shy about their opinion, and I just want to point out this, because this is also what opened up my eyes a little bit. That's a person right here, and this is a Bering Sea pollock trawler, and keep an eye on the size of this catch.

All the fish coming out of this net are about a foot or a foot-and-a-half long, and, if you watch, when this pans right, you can see the size of the net. There is one net in the water, and there is one net on the deck, and there is one down in the factor right now, and we were basically catching and processing close to a million pounds of fish a day.

It was first time in my life that I looked at this and I said, wow, there is some scientist sitting back in an office trying to figure out what is going on, and I got real interested by then, and I also realized that freezing my tail off in the Bering Sea was not what I wanted to do, and I wanted to move south, and so I got myself involved again back with turtles, and I did a bunch of consulting on dredges, and ran the Endangered Species Survey for the Olympics, and then, once again, I found myself working back down in the Caribbean.

With a little bit of direction and a little bit of experience behind me, I went back to graduate school. When I showed up, my advisor told me, well, there is these areas on Georges Bank that were closed, due to concerns about groundfish. These three areas represented closures of about 50 percent of some of the most significant fishing grounds in the Northeast.

This area right here, some of the surveys found large amounts of scallops, and the fishermen came to the council, came to the groups, and said we need to open this area up, and we had no idea what to do with it or how to open this process, and so we basically came up with a commercial survey.

We used six commercial boats, and this was my first working directly with the fishermen, and it worked fantastic. We went out there, and we surveyed the area. If we caught a hundred scallops out there, the science basically said that you're only catching just about half, and so there's maybe 220 out there.

The fishing research was showing that, no, there's basically 500 or 600 out there, and so just what this translates to are differences of a potential quota, and you can imagine sitting in this room discussing a potential quota between six and fifteen-million pounds of a fish that gets seven-dollars a pound at the dock.

We were discussing things on the order of $70 million, and so, once again, I sat in the middle of a scientific issue facing fishermen and facing the industry and realizing that one little tiny change in a number could affect people in terms of millions of dollars.

As an aside on this, this is one of my favorite images from it, just to show the scale of some of these. This is the Chesapeake Bay here, and this is New York. This fishery was opened up, and these are vessel tracking positions. Red are boats moving really fast, and blue and green are boats that are fishing in one location, and you can see many people are fishing right around the edges of the closed area.

When they opened the area up, the entire eastern seaboard basically flooded these areas. From Chesapeake Bay to Georges Bank is a two-and-a-half-day steam, and, from here, it's about a twenty-four-hour steam. We reevaluated, after four months, and we looked at what was coming out in the landings, and they reopened the area once again for a few months, and the fishery was closed.

The original estimates, remember, were nine to fifteen-million pounds. There was a lot of argument saying that we want more, more, more than fifteen. In this case, only six-million pounds was harvested during the whole opening, and, if you can see at the end, this is the landings in the blue here, and, as many boats that kept going out there, they were not catching more, and so, when we got back to the meeting room, the fishermen, the scientists, all got together and said, you know what, that original estimate makes a little bit more sense, the lower estimate, and we should have been targeting six or eight-million pounds instead of nine to fifteen on the whole thing.

That was really critical, because, one, the fishermen were directly involved in collecting the data that came up with it. They were directly involved in looking at the numbers that we were using to make the calculations, and we ended up with a real good cooperative program additionally collecting data.

That industry now has, in those closed areas -- They are using those areas and opening them and closing them as a rotational strategy, and it's a total success, and I believe it's still currently the most valuable fishery in the U.S.

While I was at sea though, I once again started thinking about my career choices and that I might want to be doing something a little bit different. While I was out there also, this article

was published, and it said the barndoor skate, which used to be found in 10 percent of all the tows, and they hadn't seen it in over twenty years, and this article was published, and you can imagine the response, saying it will be the first large finfish to go extinct due to fishing pressure.

This is what the plot looked like, and so you can see, while the international fleets were working, the Russian trawlers, in the industry, this population went way down, and then totally, completely flat, and so there was petitions to list it as an endangered species, a petition to close the entire area, and an emergency meeting in Woods Hole.

It was the first time -- I was reading an article, and my advisor told me to bring a jar with me, in case you see one of these individuals. Well, not only did I see one individual, but I caught a hundred in my first night out there, and, within a few weeks, I saw thousands of these things. I sampled over 2,300, and, all of a sudden, I realized that this article, which was put out and driving the petitions to list it as an endangered species, was off base.

I basically put myself in a position of standing up in front of people much superior to me and saying, no, the numbers on this, the predictions of only 500 left in the world, are incorrect, and so, luckily, I was able to get enough samples, and I immediately started working on the life history of the species.

I won't go into much detail on this, but the otolith work that's being done down here gives you ages on the animals, and we looked at maturity, and I was also real interested in the food habits and the prey. Without going into all the details, my main conclusion from that was the species was not as susceptible to fishing pressure as previously believed, and so I was able to calm the process down a little bit just by getting out there and being in the field immediately.

As we were just discussing, sometimes it takes a while for the process to work, and it took NOAA ten years to remove this from a species of concern in there, but this was the initial opportunity for me to look at some of the science and look at what I was seeing on the ground and realize that the two were disconnected, and we hear that from the fishermen all the time, that what you're talking about in the science is not what we're seeing on the ground, and I found myself onboard those boats and learning a lot about this.

I will tie this in right now to something that is occurring in

the Virgin Islands as we speak. John Hoenig has been funded to do research on maturity for important reef fishes in the Virgin Islands, and why should you care about maturity? Why is this important to even mention?

For me, John Hoenig is a stock assessment guy, and I will get back to that in a second, but this is a plot of length frequency distribution for redtail parrotfish in St. Thomas and St. John, and I mentioned before that we had a really hard time doing quantitative stock assessments. Given a size of maturity for this species, and I overlay this on the landings history for St. Thomas and St. John, and you can see that almost 98 percent of all of the individuals captured in that fishery are mature.

You can simulate it, and you can do it Fisheries 101. It basically says that, if you're only catching all mature individuals, the chances of overfishing and overfished for that stock is minimal to zero. It's really, really low.

We went through this for all the different sectors. Divers in St. Croix saw the same exact pattern. Pots and traps in St. Croix had the same exact pattern, and I spent hours on the phone with Bonnie, trying to figure out how we phrase this type of language, but this was a semi-quantitative assessment that basically said that these species here are unlikely to be undergoing overfishing or overfished, based solely on what is a very quick snapshot of getting a maturity and looking at the landings process.

The process I learned, working on the barndoor skate, has already been basically applied here. It is being pursued currently to continue taking a look at the size structure of the animals in addition to the maturity. For me -- John Hoenig got involved in this process, and, as I was working with the barndoor, he was hammering me with equations and things that I hadn't looked at in twelve years, and he absolutely terrified me, but, for me, working with maturity and spending most of my time on the boats, generally I was looking at the animals, but, onboard commercial vessels, when you're living out there for months at a time, it becomes almost a sociology experiment, and so maturity, for me, was really watching the maturity of the fishermen that were involved. Once again, a little too casual for this council, but I thought it was worthwhile.

Over the next few years, John Hoenig really beat some of the quantitative stuff into my head, and it took him about five years to really teach me the quantitative, and, by the end, he didn't look as good in the process, but I learned a whole lot

about how to do modeling and how work in the quantitative realm.

One of the quick-and-easy ones that did with the barndoor skate was, if you look at this plot, it absolutely looks like it's been in the dumps forever, and the article published here, saying that we need to shut it down and make it an endangered species. I mean, this not math magic. You do a log transformation of this, and guess what? You can see the decline going into the 1980s and then, from the 1980s on up, the population was recovering.

I was able to model this in a data-poor assessment, and it was only about ten individuals during the middle part of this time series, and so I became skilled at working with data-poor assessments, but, once again, the research that I did in working with the fishermen and what they told me was basically the focus of my research, and I was able to apply it directly to some of their concerns and directly into the management.

The data-poor skills got me hired working at the Southeast Center. I was on the stock assessment team, and I started working down here. I must have been doing something right, because, a few years later, I got promoted to Branch Chief of Gulf and Caribbean. The date on there is April 20, and so I got home and popped a bottle of wine and watched television, and this is what I saw that same day.

The next few years of my life were extremely challenging. Bonnie sent me to a joint sub-committee meeting, doing some of the most stressful, difficult presentations and talks that I had to do, in a situation that was extremely challenging, and so, mentally, I started looking at the maps of the Gulf of Mexico and thinking how are we going to get a handle on 285,000 acres of territory out there? How are we going to get a handle on the whole fishery?

I thought, well, part of my job is working in the Caribbean, and so I overlaid the area of the Caribbean onto the Gulf of Mexico, and I said, you know what, maybe I'm going to focus on something that is a little more size manageable, and so I jumped back down, and I met with the guys on St. Croix, and we got the opportunity of doing a cooperative survey, which was directly from my experience working on Georges Bank, and we got the fishing community directly involved in doing the research on St. Croix.

I mean, I just looked at this, and I said you have 110 square nautical miles, and we should absolutely be able to get a handle

on what is occurring in this region, and we had habitat mapping on scales that we just do not have in other places. We had information that we just don't have in many of the territories that we're responsible for managing, and so we came up with a classic design.

We came up with a geostatistical design, which no details, but, if you look at the shelf of St. Croix, this is where we sampled. We did trap sets every two or three miles out there, and we covered the entire area, and we got a great picture, in thirty days, of what the resource looked like. We had the fishermen design the traps. I built the traps in Tom Daley's yard with Nicky and other folks.

We used their vessels to go out there and collect the data, and we had a scientific person onboard just to verify the information that came in. In the end, we did 600 stations, almost 3,000 fish, sixty-seven different species. We got a top range of species based on this type of gear at this time, and we picked up a species that everyone said didn't even exist in St. Croix anymore, five of them, and I got accused by some groups that we must have killed the last five Nassau grouper in St. Croix. Well, people, we went fishing for thirty days, and there are Nassau grouper out there.

In the end, there's a lot more work to do. I decided to leave NOAA in 2012 for a myriad of reasons, mostly personal, but, for those that work for NOAA and don't know, many of you have a non-compete. You cannot work in the fisheries that you're working in, and so I spent two years having to work internationally. I worked in Belize, Cuba, Mexico, Indonesia, Micronesia, Bahamas, Philippines, and I just returned from Myanmar recently.

I worked with data from many other places, and I hear often from the fishermen that our fishery is unique, that our fishery is very different. Well, I've had the exposure and the opportunity of working all over the world, and I recognize the differences between some of the small-scale fisheries and the trap design. There is a book-and-a-half about trap designs in the world, because they are incredibly innovative all over the world, but I had numerous requests from folks that worked with STFA in St. Thomas, from Julian Magras and from Ruth Gomez, to come back down and help people get grants and do work and get some more of this cooperative research going.

I have been really excited to focus on these projects without my other responsibilities, and one of the things, as soon as my non-compete was done, we started working on the design for the

port sampling program in 2014.

I will recap the pilot program that we ran last year. The primary objective is to provide a recommendation for an efficient survey design and not to basically give the final answer, but to determine the variability between landings and locations and look at making sure that we were able to get the best bang for the buck moving forward.

One of the main things, and the title is "Commercial Landings Validation", and it is to validate the landings, and that means basically, what is coming in through other data streams, how does that compare to the information that we're collecting during our survey?

A one-month study during the pilot is too short to draw final conclusions, but the results of species compositions and the species compositions we observed, which was just mentioned within the past hour, concerns about species identification, it's already been helpful in the SSC meetings, and I just wanted to point out -- I mean, this was just brought up a few moments ago, but the forms in the Virgin Island were originally groupings, and it was limited to a number of species, and I commend Director Gomez and DPNR for improving those forms. It's a very good thing, and it was absolutely necessary.

This type of work that we're doing has already been really helpful in looking at the past data that we have to determine the differences in species composition, but the landings validation program and the landings validation is based on looking at the commercial fishery reporting rate.

In Puerto Rico, this rate is about 50 percent, and notice that I only have data through 2005, because that's the data that I was allowed to work with, but the point here is that, in Puerto Rico, if the correction factor is 50 percent, if 100 pounds is reported, that gets expanded to 200 pounds, and so that number is doubled to be looked at for the expanded or total landings, and you can imagine that changes in that number are going to dramatically affect how those numbers are reported, and it's been very interesting for me, working in Puerto Rico recently, that the fishermen actually recognize the importance of these calculations and have been asking a lot of questions about it.

For the Virgin Islands, to highlight this, this pattern right here represents the landings from 1974 through 2006. Look at this. It looks obviously like you have this massive increase in things occurring here. If someone looked at this and didn't

know, they would say this is a fishery that is just going through the roof.

We have gone from zero to 1.4 million pounds over a thirty-year period, and all sorts of red flags would be going up in a lot of cases, but the reality of it is there is no need for red flags here, because, if you look at the number of licenses that are reporting during this same exact time period, you can see the pattern is directly the same. No one thinks that the fishery has gone from zero to 1.4 million. It has changed over that time, but it's been relatively stable once you correct this information.

The pilot study, we conducted it during September and October of 2015 in the USVI and April and May in Puerto Rico. We did six regions, meaning the four coasts of Puerto Rico and St. Thomas and St. Croix. We did four samplers a day, two in high-use sites and two in low-use for thirty days, and we just did 9:00 to 5:00, and a key piece is we did no personal identifiable information.

It was anonymous, and we did it as a voluntary project, because it's for the fishermen, and we didn't want anyone to feel threatened that we may be recording their information or there may be any lash-back to the information that was being recorded. We had fifty people involved, and we did 720 sampling days, and we observed and documented over 64,000 pounds of fish and sampled 1,300 trips.

The first steps in this process was really just to go through outreach, why are we doing this and what's the point of it. In the Virgin Islands, we had three members of the fishing community that were fully supportive, and we were able to get this out, this flyer, and we were able to go out on the ground and talk to people and explain exactly what we were doing, and we also developed an electronic reporting process.

We developed software for a tablet, and it allowed for a rapid evaluation of the data, and so my phone, while I'm doing this talk, will probably have about thirty or forty messages from samplers all around Puerto Rico today and right now. At the end of the day, all of their information will get uploaded.

Just a couple of screenshots for information on the site, information on the trip, and information on the catch. As many of you know, we have problems with common names. Common names from one coast to another place is a problem. By having electronic reporting in here, no one is writing down their own

name. The name here is all pre-defined, and they can't use a different version or a different spelling. The quality control is fantastic.

The other thing that we did in here, because we have a short-term group of people, people that may not have been involved in fisheries science for twenty years, they are required, at least during the first month, to take a photograph of every species they identify. At the end of the day, a port sampler can go on to the page and pull-down photographs from every sampler all over Puerto Rico and verify the identification of the species, and I can then stand up in front of people and say we have our identifications right.

We can also look at people and say, thank you very much for trying, but your identifications are not really that hot, and we're going to reclassify them, and you're going to be doing paperwork from here on out.

The other aspect of this is I am required to make sure that people are onsite and doing what they're doing, and so those tablets have a GPS recording on there, and this is just one day where you have people sampling in Fajardo, Humacao, and down in here, and we also found one sampler visiting his girlfriend over here and going to a restaurant, and so that person was no longer with the project, but the electronic reporting has been fantastic. It allows me to oversee what is twenty people a day right now working on there.

In Puerto Rico, this is basically a shot of the sampling intensity at different locations, and we started the process out by doing a training program, classroom work for a day, and we -- In St. Thomas, we had Director Gomez and Chub and other people show up, and we did an overview of everyone. We met with DPNR after, and we said who do you like and who do you not like, and we worked directly with them even in selecting our personnel for the project, and so that worked very well.

We take them down to the dock and have them work on -- This is the Frenchtown Fish Market. We have people take some pictures and look at some fish and get familiar with it, and we then took them down to the boats. We had this gentleman in Puerto Rico walk up to me and start yelling at me, immediately, saying I don't want to talk to you. He then realized that he knew me from other meetings and calmed down, but we try to put the samplers in training in a situation that they're going to be facing at the dock.

In Puerto Rico, I am just going to give you an overview of some of the information that we found. We did over 990 sampled trips, and you can see here that Puerto Rico east has just a little bit higher than the other coasts. We got information on commercial versus recreational. While we're at a site, we're not just going to be collecting the commercial trips, and so we're also recording the recreational, and so, for each coast, we had a little bit of a breakdown of some of the recreational activity in there.

We also had breakdown by gear, and you can see, in east, west, and south, it was driven primarily by divers. On the north, you have hook-and-line, and so we have a breakdown by gear and also the difference between the high and low-activity sites.

One of the other interesting things that we took a look at is what days of the week are people landing, and we've been told, in Puerto Rico, that there is no landings on Sundays, and so we eliminated Sundays initially from our sampling. I, at this point, have not seen any evidence to support there is any significant landings on Sundays, but, the project we're doing now, we're actually investigating that, but this is the type of information where you see relative usage by days of the week.

This pattern may have just existed from the month that we did this study. With a full year of work, we're going to end up with an effort pattern by day, and we can basically allocate based on the usage that we have observed, and any sampling can become more efficient based on day of the week or time of day.

These are the different sites, the average landings from different sites, and, once again, I am just giving you the brief overview. The dark ones here are sites that we believed were high-activity locations, and so, in the east, the four sites that we designated as high locations were clearly the highest landings that we saw, and so our initial stratification during the pilot worked very well, and we had no problems.

This is sometimes how science works though. The five sites on the north that we thought were high-location sites were somewhere in the middle of the pack, and so our initial stratification, the point of doing a pilot study, was for us to be able to check on these things before we invested a lot of money in doing a full-year program, and so we re-stratified this. We've taken this information, and we've got a new strategy for the north coast in the program.

I will just point the top two out on each of the coasts, for

those that are interested in Puerto Rico. In the north, silk snapper, spiny lobster, and conch made up about 40 percent of the landings. In the south, conch was the top, and lobster was second, and then dolphin came up third, and that made up almost 50 percent of the landings.

On the west, conch and lobster made up 50 percent of the landings alone, and then you started adding in some of the pelagics, the blackfin and the silk snapper, and then you went to the east, and 53 percent of the landings during our pilot study were conch, and 70 percent was just conch and lobster in the east, and so you can clearly see differences in the coasts and what they're fishing for, and what we documented was consistent with what many people have been telling me about the differences in the regions of Puerto Rico.

In St. Thomas and St. Croix, we did the same thing. We had about 100 trips in St. Thomas, and almost 200 trips in St. Croix. We also collected information on recreational, and you can see in here that the recreational in St. Croix -- There is a few trips, but much, much lower than any commercial activity. Charter activity in St. Croix is minimal, and a little more charter activity in St. Thomas, and our work that we're doing right now is also consistent with that. It's driven by diving in St. Croix, and no surprise to anyone that's on the ground, but we now have this documented clearly.

Days of the week also and time of day, and, once again, the more information we have on this, the more efficient that we can be in sending samplers to different sites, and notice something here, and, for those on the ground, this is obvious.

In St. Croix, we've been told forever and ever and ever that fishermen go out first thing in the morning and they get back to the dock and they run to the market and they sell their fish, and your peak of activity is going to be between eleven and twelve. I was told that for seven years, and I now have proof of it right here.

In St. Thomas, you see two entirely different peaks. The peak in St. Croix is totally opposite or different than what is occurring in St. Thomas. Would we do the same thing in both places? Absolutely not. You would want to set it up differently, and this provides us the information to take a look at it differently.

Stratification schemes in St. Croix and St. Thomas worked well. They basically all fell out where we would expect them to be,

but what was not a surprise to those from Saga Haven or Frenchtown that told me about it, but you had 70 or 80, or maybe 90, percent of the landings coming out of these two primary places here, with just some contribution from other locations, and St. Croix had Altoona Lagoon and Molasses coming in. Christiansted was the only one that came up a little bit higher than we expected.

In St. Croix, the landings was lobster, primarily, at the top. One thing here is the second that we landed was unknown. Because the fishermen are going out and coming back in at eleven and selling their catch right here, they had absolutely less of a tolerance to be bothered for twenty minutes even at the dock. It was totally understandable.

The last thing, as a scientist, that I want to do is get between a fisherman and his money, and so this was clearly -- We did our best with categorizing the catch, and you will see that we're developing a technique right now to hopefully make this process much more rapid, in response to the concerns of the St. Croix fishermen.

In the end, what do we do with all of this? Well, a power analysis, I am not going to go through the details on this, but this is really the essence of what the Southeast Center wanted from this, is how much money is it going to cost for us to get numbers that have a precision or an accuracy at certain levels.

In St. Thomas, just as the example, if we put people out for fifty days in the high-use stratum and fifteen days in the low-use stratum, we would end up with a standard error of about 50 percent, which is pretty much worthless on there, but you can start looking at the number of days that it takes to sample for you to drop down and reach a point of diminishing returns.

You can start dumping two to four times the amount of money in this end of the scale and not getting much more precision in your estimates, and so this analysis guided a lot of the follow-up proposal for us to determine how much effort do we need and how much precision can we get out of this process.

Everyone calls me out on it, doing nine to five, and they're saying that you're a moron and you're missing all the yellowtail fishing and you're missing all the night fishing. Obviously, we didn't have the funding to do it, and I'm also not sending people down to the docks at two o'clock in the morning, but the information that we did collect tells us where we need to focus our efforts.

The middle line right here, this is ongoing trips, this light color, and so, when samplers left at 5:00 p.m., they recorded the number of ongoing trips, and so, in Rincon, you had half of the trips returned, and you still had half of the trips out, and this is what we missed in Rincon, but, just by looking at this information, we know that, if we want to go and make sure we capture those sections that we missed during a pilot survey, we know this is going to be the number-one location that we need to look at, and maybe we look over here, but we, once again, can now be efficient in the way we do our work and do our sampling.

These results were presented at the June 2016 meeting to the council here, and it was received very well, and we had multiple recommendations and support from the Puerto Rico fisheries department, the Puerto Rican fishermen, the USVI department, and I just had a couple of ending thoughts to it.

The main thing that I noticed is we need education and outreach. People are still unsure as to exactly what's going on with some of the scientific work that we're doing, and I mentioned before that we have to come up with a way of rapid sampling in St. Croix. There is no reason to be doing recreational and commercial efforts from two different line items. If you've got people at the dock in these places, they can be collecting information on both.

We need to have consistent, familiar faces to sample, and then the main thing that I really did at the end is the governance. There has to be a memorandum of understanding between the fisheries departments and the samplers and the contract samplers that are working, so that everyone can work together and make sure that we aren't stepping on toes, and, once again, we can be more efficient. If you work together -- There is no sense in someone going to the dock and then someone else following up a little bit later on.

Once the pilot was done, I got contacted immediately after to run a pilot program on recreational, and I have just a couple of slides to point out that that work has been ongoing since October of last year, and it has already come up in a number of conversations.

The council has been discussing dolphin and wahoo and putting them in the management plan. The recreational fishermen in St. Thomas and St. Croix are saying, well, we don't have any information and what are we going to end up with for an ACL, and this is commercial landings available here. There is no

consistent recreational information that's available.

We have already, in just a few short months, have been able to document ninety-four recreational trips, and this is just the first three months of the project, and we've got landings that are 1,300 pounds of dolphin, and about the same for wahoo, and this is a sub-sample, and so these could be expanded up and give at least a base of an idea for where to start with if there was a recreational ACL. This type of process can at least provide insights into what is now not only a data-poor, but a data-void, source of avenue that's going to be very difficult to pinpoint the ACLs for.

After the pilot study, we put the proposal in, and I used all the support and the comments on the record from here for people to say, yes, we need to do this, and we got funded in February of 2017. We did an outreach to the fishers, and I jumped on my boat and took it over to St. Thomas and spent about two or three months over there trying to talk to people and get the word out on the ground.

In Puerto Rico, we were able to put these flyers together that gave the feedback of the results of the pilot study to the fishermen that we were talking to, and we then also were able to give them information on what we were going to be doing, and so, once again, reaching out to the communities, to make sure that everyone is aware of what we're doing before we start.

I just thought I would throw a couple of pieces in for the rapid sampling, and this is really exciting to me, because, one, there is just no way that you're going to get between the fishermen and their money, and we have to come up with a better way of doing it, and this is, I think, a way that we can actually take leaps and bounds for quality of information.

We have basically come up with a system where you can bring the fish to the station or we can have this mobile scale that automatically records the individual weight of the fish and takes a photograph, and the fish can immediately go down in a cooler.

If you just imagine yourself and how quick you could take one fish and put it on a scale and slide it down, and we can do 200 pounds of fish in less than ten minutes in there, and, with that, not only do you get the individual weights of the animals, but we have automated length determination of it, and I have a facial recognition programmer that swears that he can do automatic identification on these reef fish here, and I am

holding my breath on that one. I am sure that 50 percent he can do, but, if he can figure out how to identify the parrotfish, I will kiss him myself.

This is really exciting, because this is something that the fishermen get the TIP sample, and, when they get TIP sampled, they're going through and measuring the length of the fish, and it takes a fair amount of time. This process, getting that same information, can be done during the same exact process. That is just the automated length measurements.

As I mentioned before, I set this talk up for the MREP program originally, and we focused on externally-funded research projects, and one of the main things that I mentioned before is there has been a lot of tension in the air, and we've had a lot of situations recently, and it's been extremely challenging, and fishermen have said that I don't want to have anything to do with this.

We have had people from the fisheries department say that, no, you do this on your own, and so I felt that it was my task to really show people initially what was the point and why would you want to do this project, why would you want to do the port sampling.

If you remember the pattern I showed of St. Croix with the increasing landings from 1974 all the way up to 2005, take this limb and take that limb all the way back down. That's the same exact ascending limb that was due to the number of licenses reporting to this point in time.

In 2007 and 2008, and up into the data evaluation meeting, we had a number of people from the Virgin Islands go on record at that time saying that everyone is reporting 100 percent accurately and there is no reason for us to take a look at any sort of expansion factor or correction factor in the Virgin Islands.

When I look at this pattern here, you have clearly -- The first entire part of this pattern is related to the number of licenses reporting, and now you have, in the last ten years, you have these declines, and this is total landings, non-confidential landings, for all species, and so it is lumped together, but, in St. Croix, you have basically an 80 percent reduction in overall landings during the last ten-year period. In St. Thomas/St. John, you have a 50 percent reduction during this time period.

In St. Croix, we have had a number of people go on the record to

suggest that we need this port sampling program, because we need to document that people's behavior is changing in the way they're reporting information. It is absolutely obvious to anyone that works with fisheries information -- I see two people in the back there that I know have worked with the fisheries department nodding their heads yes, that you have to keep track of this information.

In St. Thomas/St. John, we have had people, up until the last council meeting, saying that, no, everyone is reporting accurately, and there is no reason for a correction factor, and we do not want a correction factor in there, and so you now have a 50 percent reduction here that the question is why?

The port sampling survey can basically look at this information and determine whether the information, that data stream that's coming in that is currently used to calculate these, is consistent with the port sampling program.

In Puerto Rico, this situation was a whole lot easier to explain. This article came out a few weeks ago. For those that don't speak Spanish, it basically says there are way too many regulations and there is not enough incentives, but, if you get into the meat of this article, what came out in this article is the fishermen are incredibly suspicious of all the statistics.

They are incredibly suspicious of the correction factor that is being used, and they are asking for information to evaluate the correction factor. They are basically asking for the port sampling program, and so I've been going around and doing talks and showing people the same types of patterns, and the point has been very well received that the correction factor from reported landings to expanded landings is extremely important. It is almost impossible to interpret information unless you have a good handle on this information, and so no additional details there, but it's being received very well in Puerto Rico.

We started last Monday with a full-fledged team in Puerto Rico, and we have eight samplers a day full-time, working nine to five, at forty-plus locations, and it's going very, very well. We have one location where we've got a private pescaderia that we have to have a little bit more discussions, but, other than that, we are having full cooperation across the board.

We have been working -- I have been speaking with Nelson and others on the west coast about doing some additional sampling on the deepwater snapper fishery, and, once again, we're developing the rapid sampling technique, and so everything is going

extremely well in Puerto Rico. Unfortunately, with some of the conflicts in the Virgin Islands, we have postponed that project indefinitely at this point in time. Thank you for your time.

CARLOS FARCHETTE: Thanks, Todd. Any questions for Todd? Okay. Velazquez.

CARLOS VELAZQUEZ: Thank you, Mr. Chairman. Todd, it's a very good job, a very, very good job. It's amazing for this project in these people in the villages. Remember, in my area, it is your second home in this place. Thank you.

CARLOS FARCHETTE: Bonnie.

BONNIE PONWITH: Thank you, Mr. Chairman. I just want to comment on how crucial the data are. Every single meeting that I have come to over the last ten years with the council, one of the topics of conversation is how crucial these data are, because the data are used for analyses and management measures that do have high impacts on the livelihoods and lives of the people that live in the Virgin Islands and Puerto Rico.

What I like about this project is that it gives us a feel for how to get more science for the dollar, and that becomes excruciatingly important, because I believe we're in an era right now where we're not going to be getting a lot more dollars for science, and what that means is we need to make sure that every nickel that we have is being used with the maximum impact, in terms of the goal of improving the quality of these data.

To be able to take a look at our existing practices and evaluate are we hitting the areas, are we hitting the times, are we hitting the days, in the right blend, to be able to get the highest precision in the data for the expenditures we're making is a very, very important venture, again because I don't see a lot more money coming in, and we need to make the money we have work the hardest that it can possibly work, and that's the goal of this study, and I just want to thank the people from the industry for their cooperation in helping to make this project a success.

CARLOS FARCHETTE: Marcos.

MIGUEL ROLON: We have Mr. Blankenship, and he's on the Go to Meeting, and he has a question first, and then Marcos.

CARLOS FARCHETTE: Marcos and then Blanchard, and then we'll see if Blankenship is up.

MARCOS HANKE: From the previous on the pilot project, from the previous dataset that you have up to now, which is very preliminary, is there anything that you can highlight of if there is any difference on the species composition, anything that indicates, in this preliminary data that you are collecting now, that attracts your attention, and that's number one.

Number two, and the most important, is we were discussing, a little while ago, once we put the indicator species together, the data that you are collecting that will have a good idea on the fishes and the composition of that catch, and I believe you can, at least in some of the cases, identify which gear was used for that, and I am seeing that your data is going to be one of the best data to help to analyze those indicator species divisions or mechanisms, and can you elaborate on that?

TODD GEDAMKE: Let me answer the first part, and then you might have to refresh my brain on the second part. The first one is about species composition and is there anything that I've noticed that is in that, and one of the main things in Puerto Rico is basically every fisherman will tell you that a Class 1 fish and a Class 2 fish -- That's what matters. They are getting a certain price for the 1 and a certain price for the 2.

Some of the reporting that is occurring is lumping those Class 1 or Class 2 together, and lobster is the biggest example. In a recent conversation, we were trying to explain the point of this project with the species composition, and it became very obvious that, when people now are putting slipper lobster and spiny lobster in the same basket, the sales ticket just says langosta, and so it's the same thing.

When the closure comes about, fishermen are going to be allowed to catch slipper lobster. It's Caribbean spiny lobster that's closed, and so the basic distinction between the importance of that species composition is becoming very, very clear in there, and I think what we're starting to see in certain locations is that those lumping -- We will have some information, once you go through a whole year. Like I said, this is only a snapshot in there of looking at some of those lumping and being able to determine the behavior of lumping reporting that is occurring.

I think your second part was indicator species on this, and I am not -- I said you might have to refresh my brain, because I didn't have a good answer for you right off the bat, but what we are going to have in this is a very well-detailed set of information on what is caught with what by gear.

Your indicator species is -- You want to look at a species that is vulnerable in the same way as the other species in that group, and that type of information is going to be invaluable for it, and so it will be helpful, but I don't hang my hat on that with thirty days right now, but we've got another week-and-a-half here, and, by the end of the year, we're going to have, for 2017 to 2018, during this time period, we will have very detailed catch composition for every gear that is used, and the other thing is by location.

I mean, I don't need you or Nelson to explain to me east and west is different. Even on St. Thomas, you've got North Side and Frenchtown, and they're different. They fish somewhat different. There is different things that happen, and so, yes, that's exactly one of the things that we'll be able to look at, is that very detailed species composition and what might be able to be used as an indicator.

CARLOS FARCHETTE: Okay. I have Blankenship is finally on, and then I will go to Blanchard.

GRACIELA GARCIA-MOLINER: The question from Randy is how do you see the port sampling aiding with improving sampling of rare-event species landings, such as HMS?

TODD GEDAMKE: Well, by definition, the rare-event species are rare, and so, luckily, we've got funding to be out on the ground in massive levels of effort, as hadn't previously been done, and we are picking up some species at this point in time, and, Randy, I know your knowledge of sharks also makes you knowledgeable at how difficult they can be to identify at times.

We have some sharks that, by the time they are reaching the dock, are difficult to identify, but what we're going to get out of that is kind of a similar response to what Marcos was asking about the species complexes. With the rare-event species, we're going to have people on the ground, at those locations, and we are going to have points.

We are probably not going to end up with hundreds or 200 records for individual species on there, but we will end up with an indication of which locations on the island we have seen one, two, three, and others.

We will also be able to eliminate other locations that we have not seen a shark in a full-fledged effort in this region or in this area, and so, once again, the ability to use this

information to efficiently design a strategy to take a closer look at those rare species, that information will be able to come out of this, but, like I said before, I'm not going to hang my hat on providing Randy or HMS with an assessment here, but the information that we get will be very valuable in strategizing how to collect information in the future.

CARLOS FARCHETTE: Marcos had a question on sharks.

MARCOS HANKE: A question. Because the sharks require some different angles on the picture, for maybe those pictures to be used for identification, do you see that your system has that capability if HMS coordinates with you?

TODD GEDAMKE: The system that we're designing, once again, can't accomplish it all. The system we're designing with the camera program is about twenty-four inches and smaller, and so we're not going to be carrying around a system that can photograph and do automatic identification on a six-foot shark out there.

However, in the first eight days of the project, we had two sharks that we have photographs of. The first one was half in the shadow and half in the sun, and the other one was a shot straight down, and so we're guiding the samplers to how to photograph those sharks in a way that is identifiable.

Because we have the information that night from them, I can send them a text that night and say, if you see one tomorrow, I need a shot of both dorsal fins, and I want to look at this, and, if you can, give me a shot of the teeth or something like that, and so we're able to guide them into collecting photographs specifically for it.

I know you have an interest in this, and I have been contacted by some other folks asking about the condition of sharks being landed and what we could do to assist in that process, and so I'm happy -- While we have all the people on the ground here too, if there's anyone else that has additional information that's not going to require us burdening the fishermen any more than we are now, I am happy to entertain it, and I'm happy to collect additional information.

CARLOS FARCHETTE: I have Blanchard and then Miguel.

TONY BLANCHARD: Todd just had up a graph there, at the end of the presentation, with St. Thomas and St. Croix and the decline. It's one of the last graphs you had. Now we will get into the

subject of data, and I asked Ruth earlier, because of the decline in the fishermen and the participation in the fishery, whether she has the information as to the fishermen and the fishery that was, to see where let's say the ups and downs come in, because some guys strictly fish traps, and some guys strictly fish yellowtail and hardnose, which you would consider the jack.

Some guys do seine, and some guys do bottom fishing, and so, with that kind of information, it would show us exactly who stepped out of what department and what fish should have taken a decline just by the gear and the fishery they were in.

Ruth tells me that she does not have that information, and so I'm going to request that information from the Science Center, who should have it, because it seems like sometimes the Science Center is a little reluctant in giving up the information that is needed, or at least it sounds that way, and so I'm going to put in a request for that information.

Ruth is going to ask for exactly what she wants, and maybe we could figure out where the ups and downs come in, because there is a lot of guys that don't fish, and they don't fish as hard, because of different reasons, and they're fishing a certain fishery, and that would probably fit into this scenario of ups and downs and what species of fish is missing and is not missing, because of the fishery that was stepped out.

CARLOS FARCHETTE: Bonnie.

BONNIE PONWITH: The Science Center is a steward of those data, and, if those data are required, we, with a request that is crafted well enough that we understand exactly what you want, we can deliver it. The one obligation we have is data confidentiality. If Director Gomez asks for data, we can share it with Director Gomez, because we can do that. If an individual fisher asks for data that isn't masked, then we need to be careful about how we prepare those data, to protect individual fisher's business practices, and that can be consolidated as long it's consolidated.

My big thing is certainly we can look to see if there were gear shifts, if there were species shifts, but I think the main point of that slide is not the nuances. The main point of that slide is what looks to be an extremely large general reduction of landings over a short amount of time, and that is concerning.

If I look at that slope as a biologist, my first question is

what are the catch per unit efforts? Did the catch per unit effort also decline? Did effort decline, or did -- What is behind a decline like this, and the answer to that would be very important from both social standpoints -- If people are leaving the fishery, understanding what the rationale for that is is really important, because the economics and having vibrant fishing communities is an important part of our collaboration here together.

The flip side of that is, if it's because, in general, the populations of fish across the species are in trouble, then that's a completely different answer, and understanding and teasing apart what led to those declines becomes extremely important, and that is why having a sampling program that actually sheds light on the efficiency of our contemporary practices for how we collect those data, to make sure that we're interpreting those data correctly, is so important.

Interpreting the data correctly is as important as having the data in the first place, because the way we interpret those data has huge implications for both the animals on the reef and the fishers in the communities that rely on them.

CARLOS FARCHETTE: A follow-up on that?

TONY BLANCHARD: That's precisely why I am asking you for the data, to bring some clarity to this graph, and maybe we could answer some questions once it's looked into, because this data only shows certain things, ups and downs, and it don't show the reason why it went up and it went down.

CARLOS FARCHETTE: Miguel and then Todd.

MIGUEL ROLON: A couple of things. The Center cannot produce data that they don't have. They cannot produce metadata that they don't have, and so why the curve goes up and down is something that we need to find out and whether the Center can provide that to us, but what Todd is presenting to you is -- Todd, can we go back to the graph where you have the 50 percent and the 70 percent?

That is the kind of information that we need. We need to explain it, and the only way that we can get that is through surveys like the one that he is doing, because, if you don't do anything, the data will show that there are problems in the fishery where there are not, and that is the key part of the whole thing.

We may end up saying, okay, we validated this, and certainly you have a 50 percent reduction, but, when you ask the fishermen and they say that they don't see that reduction, and they are fishing as always, or more or better, but, until you have the statistics from the Center or from surveys like this, you won't be able to use it for the famous ACLs and the exercise that we do, and that's why it's so important to have this kind of information available.

I am worried about the other issue, and that is, in one of your graphs, you said the U.S. Virgin Islands is postponed indefinitely, and is that in -- That's it, or can we revisit that, because I believe that we need similar information from the Virgin Islands, and I would like to rely on the opinion of Ruth and Julian and the others of how do you see this? If you think that this is postponed indefinitely, so be it, and then we will continue with Puerto Rico and the St. Croix area, to get the information that we need.

The other thing is the proposal by a council member should be drafted, and we can help you with that, to draft a letter to the Center requesting the information that you want. That way, we all know what we want, and the Center will know what is required from the Center, and they can say that yes or not we can provide that, and so we can help you. Graciela can put together the letter accordingly, and Graciela and you and Ruth probably can look it over.

CARLOS FARCHETTE: Okay. I have Julian, and then I have to move forward. Todd.

TODD GEDAMKE: I wanted to follow up there, and, Miguel, you just asked me some questions in there that I would like to follow up on. First of all, the request to the Science Center is not going to produce anything related to this, and, the information that you are requesting here, this is exactly what we all did exhaustively in 2009 and 2010, the data improvement workshop.

We all looked at this information, and we said do we have the ability of validating the landings, do we have the ability of doing this, and so this is not something that just came up like this month, and we did this exhaustively. We looked at all of the information, and, Tony, your question is right. This is not NOAA's responsibility.

If you look at the ground and you say who is on the ground and who is responsible for collecting the fisheries data on the

ground there, and, when you ask the department for information on effort, for information on trends, that information should be available from there.

Now, at the time, in 2009, we don't have the money to do the extra work, and so, in 2009 and 2010, as a group, and Julian was on it, and others were on it too, and we put a proposal together to basically look and say how can we answer this question, and the reason that we're doing this right now is to answer the exact question that you're asking of this group, which is also why I lead into Miguel's question, which is why is the Virgin Islands postponed?

Well, the fishing community and everyone that's been involved in this process has been asking for this data and this information for seven or eight years right now, but, when we get people on the ground right now -- I mean, there is no way I can really describe this in any other way but an absolute total lack of cooperation from the department and from the people that I've been interacting with.

I mean, Tony, you have been fully involved, and you were supportive of this last June, and you went on the record saying you were supportive, and Director Gomez went on the record as saying that she was supportive, and Julian went on the record as supportive, but, when we hit the ground now, something happened, and something happened last fall.

At FAC meetings, we suddenly started hearing a totally different tone to some of the discussions that were going on, and there was complaints about what NOAA was doing, and I hesitate -- I will not recap anything else in that as to why we're postponed, but, at the last DAP meeting, which was I guess six or seven weeks ago, in front of an audience of people, the statements were made by the Director that I will not work with you, and I will not work in conjunction with you. This project will have nothing to do with me and will have nothing to do with Fish and Wildlife.

When I asked about, well, we need to have an information meeting and can we have an information meeting, you will get nothing from me, no, sir, and you will get nothing from the department on this project and you can just request the names from the Southeast Fisheries Science Center.

That was the point where I said that we have a real problem here, and the information that we're getting and the interactions with all of the fishermen that I've talked with --

I am not getting that from anyone there. I am getting it in some of these meetings, and I would have no problem operating in that environment and no problem operating on the ground with the fishermen, because I can explain to the fishermen what is going on.

I can explain to the fishermen how this is for their benefit, and I hope, from me giving you a little bit of background on myself, my job is to basically make sure that reality of the science and the reality of what's going on on the ground is used to make decisions for their lives. I have spent my entire career making sure that fishermen get a fair shake with the science that's going on, and I'm doing nothing different here.

However, the problem is, when I go talk to fishermen right now, there is an active campaign of misinformation that has been occurring on the ground, and what happened, starting on February 9, is we had, all of a sudden, a call from NOAA, when asked how to coordinate this and how to make this work, and the call was made speaking to Director Gomez about the project, and the word "catch validation" and whatever else was said during the conversation, but, the following day, the email that I got was a description of what you and your team will be doing in the USVI, once explained, will not go well with the fishers, and, simply put, I hung up the phone not comfortable with the future tone of port sampling.

Following that, two days later, I received numerous phone calls from people saying that I was just told by DPNR and DPNR staff that purpose of your project is to document people falsifying their catch reports, and that was repeated by some of the people that are in this room.

That is sad to me, because everyone has heard about this project, and everyone knows exactly what this project is doing, and it's anonymous. There is not any personal information being collected. It is impossible for that statement to be true, and that has continued, and so the fishermen now are really nervous about interacting with the project, because of the information that they are getting directly from the DPNR office.

Since then, just to highlight how far this has gone, there has been repeated statements, and I am repeating only things at FAC and DAP meetings, that there are threats to close the federal waters and shut the fisheries down. Most recently, at the last DAP meeting, and actually the Commissioner just called in to say the trap reduction program was signed, but Director Gomez stood up at the last DAP meeting and had an emergency and had to step

out and told the fishermen that Roy Crabtree just called and said that, if we don't get the trap reduction program signed, that he is going to close federal waters, and I know that's not true. Dr. Crabtree, is that a true statement, that you called and said that you would shut federal waters down?

ROY CRABTREE: No, I have never done that.

TODD GEDAMKE: Okay. I am making this point right now because my challenge is to communicate information and to communicate the point of this, and I am getting a little steamrolled on part of that, and so there has been also a lot of people on the ground now saying that the point of this survey is to shut the fisheries down.

The recreational fishermen are being told repeatedly that, if you cooperate with the survey, that the fishery will be shut down, and, once again, Roy Crabtree's name is brought up repeatedly that, if we do not get a data collection program going on, that Roy Crabtree is going to shut the fisheries down, and Roy just made the statement before -- It has been repeated over and over and over.

At the last meeting also, the last FAC meeting, we were also told that NOAA Fisheries is going to close down if they do not improve their data collection process right now.

CARLOS FARCHETTE: Ruth.

RUTH GOMEZ: First of all, the reason why your sampling program can't get off the ground is not because of anything that I said. First of all, it is delusional to think that I could influence grown men into doing something or not doing something. I think -- First of all, half of the stuff that you said, probably 99 percent of the things that you said, are erroneous.

I would never, ever, ever make a statement that if they didn't do something that Dr. Crabtree would close or he would have some sort of reactionary measure that could cost them their livelihood. That is false, and I take high offense to you making that sort of statement.

We all know that that fish trap reduction plan has been going on for years, and there was great concern that it had to happen because potentially, one, it hadn't happened for years, and it needed to happen, because it was something that, you know, especially for the EEZ, there needed to be some sort of reduction. This is before I even left Fish and Wildlife five

years ago. Okay?

Second of all, my responsibility is to the government of the Virgin Islands, to DPNR, to Fish and Wildlife, and your project, Todd, became ill-fated, because of the lack of trust you had with the commercial fishers, and so my duty was to make sure, as Dr. Ponwith told Commissioner Henry at the April meeting in St. Croix, the jewel of Caribbean data, fisheries data, is Fish and Wildlife's port sampling data.

It was my duty, right, to my job, to my employer, to make sure that my port sampling program did not fail or be impacted because of whatever it is that was taking place between you and the commercial fishers, and so, when I made the statement at the DAP meeting that, no, I don't want to be a part of this sampling program, it was not that -- I didn't have anything -- It was simply to protect my port sampling program, because I had heard repeatedly, from numerous fishermen, that they didn't want any part of your program and they didn't want -- I didn't want the trust that I had taken years and years to develop, literally, to be impacted.

Listen. I think I have proven to this council that when something needs to get done, something that is almost virtually impossible as a fish trap reduction plan that sat here for five years, going around and around and around, and, in less than a year, you are two days away from having a signed plan, and nobody ever questioned my duty or my responsibility or my loyalty or what needs to be done and done the right way.

I take high offense to what you are in here putting on the record about me, because you're not talking about the department. You are talking about Ruth and her duties as a Director, and I think my actions have spoken to what I will do and the right things that need to be done, regardless of whether they impact the fishermen in a bad way or in a good way.

Please don't do that anymore, and please don't stand up here and -- That action, this whole monologue that you just did, is exactly why the fishers have a problem with you, and please don't do that anymore, Todd, because what you are telling Dr. Crabtree, and I am watching his reaction, is almost like they're sitting here believing the things that you are saying.

TONY BLANCHARD: Todd, I am going to talk to you straight up, and I don't duck no corners, and so I'm going to bring a little clarity to this here. I was the one who was saying if we don't get this trap reduction through that we stand a chance of Roy

shutting the fishery down, and I said so. You have the authority to do so if you so choose, correct?

ROY CRABTREE: Well, that's a complicated question, but, no, I don't have the authority to just waltz in and shut fisheries down just on a whim.

TONY BLANCHARD: I am talking about the trap reduction is what we're talking about.

ROY CRABTREE: I don't have any authority to say that, just because we don't have trap reductions, that I am going to shut the fishery down. This is all very complicated stuff, and a lot of us here have worked together for a lot of years, and it is disturbing to me to see all this blow up to the extent that it has. My goal down here has been to try and support the local communities and the territorial governments and to try and keep these fisheries going, as best I can.

TONY BLANCHARD: I agree with you.

ROY CRABTREE: I think that's your goal too, Tony, and, Ruth, I think that's your goal.

RUTH GOMEZ: I don't understand where these statements are coming from, because I never said that. That would mean that you are some sort of reactionary man, Dr. Crabtree, and I don't feel that way about you.

ROY CRABTREE: I am not sure either, but, on the same hand, I have worked with Todd for a long time, and I have had a lot of respect for Todd, and I guess that's what disturbs me about this, because I am seeing folks that I have high regard for and seeing the stresses and things that are going on here.

You know, to the extent that we don't really understand what is happening in the water and what is happening with these fisheries, the potential that we're going to make mistakes is pretty high, because we don't have anything to guide us on where to go, and it could be mistakes that we close a fishery down needlessly, but I would say it's more likely that we potentially don't do anything and we watch some of these stocks really decline and some problems with the ecosystem.

It worries me when I see that big fall-off in landings, but I am like you guys. My question is, well, why is that happening, and I don't see anything that makes me believe that our stocks have declined that dramatically over that short of a period of time,

and I don't think anything Todd has showed me is indicating that, and so how else do you explain that fall-off?

Well, maybe it's market driven, and I bet you that is what Julian is going to say, that it's market driven and people aren't fishing and, okay, I know that happens here, and maybe that's it, but I think all of us ought to agree that it would be good if we had a better understanding of what is causing that, but I suspect Todd is right that the Center is not going to be able to give us anything that's going to give us the answer to that.

Then the question is going to be how can we all pull back together from all of this and try to figure out what's the best way to get to the bottom of this and figure out what's going on, and I don't have the answer for you to that one, and I'm not sure where we need to turn now, but I just encourage all of us to kind of lower the tensions a little bit and let's try to figure out how we can move forward together to try and figure out what is happening here.

Ruth, I have a lot of respect for you, and my experience with you has been that you get things done, and I respect that, and I appreciate that, and so I'm not sure where we turn right now.

MIGUEL ROLON: If I may, you are close to -- Hopefully we can have lunch at twelve and we'll be alive. There are a couple of things that I would like to say, seriously. We don't have to defend Roy Crabtree, but, when we had a lot of pressure ten years ago to close the darned fishery, all the way from the Southeast to here, he was the one who said that I'm not going to close anything without any information. I am not going to close anything, because I am not here to close fisheries. I am here to manage fisheries, and we have to do it legally.

Since that time, we have been working, especially with the fishermen of St. Croix and St. Thomas, and Julian, specifically. Julian and I used to text a lot on Saturday and Sunday about the moratorium, because you worked on the moratorium before when we worked on that, and now the final push was given by Ruth.

I believe that this is a case where people have good intentions with miscommunication and we all screw up the whole thing, and I think that we have to tone down a little bit about it. My worry is with the fishers of the Virgin Islands, because here is an opportunity to get information that will help them in the future to defend their point about the fisheries that they have here, defend it in a way that we can prove it scientifically, defend

it in a way that will cut the mustard legally.

We have one request from Tony, and that is something that we take very seriously, and we are going to do it through the Center. Whether the answer will circle back to what we just said today and there is nothing that will be added, but at least we will have that question answered.

The other thing is that probably we can do it over some time, and I am lucky that I am not going to be in between it, is that we give another chance for Todd and the group to discuss if we can fix this in a way that the U.S. Virgin Islands fishermen, especially St. Thomas and St. John, can work together with the division and make sense about the whole thing.

The market-driven issue is something that Julian and other fishermen have been hammering to us, and they are right. In the case of St. Thomas/St. John, Dr. Juan Agar proved to us that -- It was a long presentation, but we found that the fishermen in St. Thomas and St. John have a better return to investment, on average, than the Puerto Rico and St. Croix, because of the market-driven issue, and they also have -- They don't fish for what they are not going to sell.

It sounds like it's simple enough that everybody would do that, but it's a phenomenon that we cannot explain, but, anyway, my point is, and this is the last thing that I was going to say about this issue, is, if you can, after lunch or sometime, come back and tell us whether yea or nay that this system is something that we can fix or yea or nay that we are locked horns and we move to some other things, fine, but the chance of looking at this information down the hill with the fishery is something that we should not let it go that easy.

CARLOS FARCHETTE: Julian.

JULIAN MAGRAS: A couple of things. I am going to start off with a question for Bonnie, and you can answer it later, but the Fishery Advisory Committee for St. Thomas/St. John, at our last FAC meeting, they wanted to know what is the process of requesting at least the last fifteen years of numbers of trips, catch per unit effort, of the different types of gear and the different poundages that was landed, and we want this information because, at the last SSC meeting, I continued to bring up the point of the drop in landings.

It's not only market driven, but it is due to the fact that we have a lot of fishers that have come out of the fishery, and we

want to prove that there is reasons behind the reduction and it not only can be a lack of reporting, or underreporting, but it could be market driven, and it could be the economy, and it could be the lack of fishers participating, because we know what's going on in the fishery.

The problem of what happens a lot is -- That's my question to you, and so you don't have to answer me right now, and maybe you can tell me on a sidebar who we need to write the letter to to request from the Chairman of the FAC, Claude Berry.

A lot of times, we look at all of what's going on, and the fishermen are not involved. We have been more involved over the last few years, more than ever, but, a lot of these projects that take place, the fishermen are not involved. A perfect example is we just had a diving study that took place in the Virgin Islands by NOAA, and they sent down a group of people to dive with the students of the university and go and count fish. Not one fisherman was involved in that, and we just happened to hear about it.

A statement was made earlier by Marcos about the difference of the different times of the day for fishing and where you would see the fish and how you would catch the fish and everything, and the fishermen are the only ones with that information, the only, only ones with that information, and so we need to figure out a way, in every project that's going to be involved, of how do we get the fishermen not only to produce the information, but to actually have hands-on in the projects, and I have been saying so, and I said so at the joint chairmen/council meeting at Frenchmen's Reef last year, and I said so. The key to getting what you need is to have the scientists and the fishermen working very closely.

Go out on a boat with us one day and get the information, and then let us go back to the office the next day and see what you're going to do with our information. We have too much ups and downs.

Then I also, at a recent meeting, understand that it takes a year-and-a-half to process the data that is sent in by Fish and Wildlife, when Fish and Wildlife turns in this data. As soon as they get it, it's processed and turned in, and I don't understand what the turnaround, in order for the numbers to be produced back and to be seen, if we are getting close to an ACL or we're not getting close to an ACL.

Todd's study, the first time that it was questioned about this

study was it was questioned by the FAC, and we had one of his workers, Peter, in the room, and he couldn't answer the questions about what was going to be done with the data, and, since then, it has spiraled out of control. This word, "validation", fishermen take it as their catch being validated to see if they're actually reporting correctly, and so it went sour from the beginning, and it hasn't changed since.

When we sit at -- I watched them say that this new mechanism of taking pictures and all of this automated stuff and you can get a sample done within minutes, I just had a port sample done on Friday by Fish and Wildlife, and there were twenty-one species, 205 pounds, and it was done in thirty-five minutes, and that's total weight and lengths and everything, and I know that's true data, but also understanding that none of that data that has been collected by the port sampling has been used in any of the process as yet, and that's a problem also.

At one point, the fishers are saying, well, why are we doing port sampling if this data is not being used, and we're only using the numbers, which is the poundage of each species that's been collected, and so the answer was there is not enough information collected as yet to use from the port sampling.

The problem with Fish and Wildlife is that they can't do more port sampling, and it's because they don't have the money. They are given one set of money on an annual basis, and the same staff has to do about ten or fifteen different grants. We don't have dedicated port samplers. Those same port samplers have to be doing other jobs.

Maybe what we should be looking at is getting two port samplers for St. Croix and two port samplers for St. Thomas/St. John, and that would be their dedication, is just to port sample. The fishers are right now more involved in the entire process than ever, and we want to give as much information as possible, and I thank Dr. Bill Arnold, and I thank Dr. Crabtree for allowing him to come down to a meeting that we had in St. Thomas here recently to speak to the recreational fishers and to speak to the commercial fishers about the importance of the reporting and the process that is taking place with the island-based management plans.

We the fishers are involved more than ever, and we're willing to continue to produce, and so here it is that we have a big argument here going on, and I don't see, as the representative of the fishers of the USVI, St. Thomas/St. John, that it's going to change that easy, and that's towards Todd's project.

Until he can change that tone and address us properly, it's not going to change, and, in order for it to work, Fish and Wildlife has to be involved. We will not participate in it, and I'm telling you straight up, unless Fish and Wildlife is involved in the project, and so however he can fix that with Fish and Wildlife, if it can be fixed, but, until then, we will not be involved. We are interested, because we're all trying to achieve the same goal at the end of the day, and so I ask, whatever needs to be done, for it to be done. Thank you.

CARLOS FARCHETTE: Miguel and then Todd. Then we've got to break for lunch.

MIGUEL ROLON: Yes, but, anyway, Julian, you know -- You are respected by your peers and the fishers, and do you think that there is an opportunity of having a meeting of the minds with Todd and the division and the key fishers and discuss this and make sure that the right words are used, the right explanations are used, and give another crack at it, or do you think it's a lost cause?

JULIAN MAGRAS: I don't have a problem with having a meeting. I am always in favor of trying to fix things that are broken, because we've been trying to fix this process -- I have been involved in this process for the last fifteen years, fully involved and understanding it, clearer than a lot of people sitting at the table, and I'm sorry to say that, and no disrespect, but you've got to get all the key people in the room and have a discussion.

You've got Carlos, and you've got Tony, and you've got Director Gomez, and you've got port samplers in the back of the room, and you've got Todd. Put a meeting together, and I represent the fishers. I could get fishers online or on the phone or anything and have a meeting to discuss how do we move forward. We'll get the FAC to buy in, and then we move forward, and so I know it's a very strenuous situation, but anything can be fixed, but it needs to be done the right way.

MIGUEL ROLON: Ruth, I am going to wear a white-and-black-striped shirt this afternoon, so I can be the referee among all of you, because I have respect for Ruth, and I have known Ruth for more than thirty years, and I know all of you, and I know Todd, and I believe that we are here to work for the betterment of the fisheries of the U.S. Virgin Islands and Puerto Rico, and our responsibility is really with the fishers of both areas.

I am more concerned about the fishers than all of us here, and I propose, if you need to, rather than having a meeting right here, maybe you can have a meeting in St. Thomas, and the council can pay for the venue. We offered that before, and maybe we can have a meeting anyplace that you need, anyplace that you want, and I believe that Bill went to the -- The venue was the Windward Passage, and the council can pay for that venue, and, if you all agree, we can have a meeting shortly and discuss this in a calm way and toned down, as Roy suggested.

We can see if we can start from scratch again. If, at the end of the meeting, there is nothing else that we can do but move forward with modifying the status that we have at this time, so be it, but at least we give it another try. If you all agree, especially Ruth, if you agree with that, then we can coordinate with you and Todd and Julian and see if we can do that.

RUTH GOMEZ: Let me get this right. Let me get this right. I am to sit here, right, and watch that gentleman down at the other end of the table tear away at my character and my credibility and then I'm supposed to get in a room and pretend like everything didn't happen and we're going to fix it and play in the sand nicely? I don't think so. I don't think so, Miguel. It doesn't work that way.

He took -- Listen. I have a problem. I have a serious problem when you attack my character and you attack my credibility. I really do, and I don't know about the rest of you. You all can speak for yourselves, right, but it's not just going to be as simple as getting in a room in a big sandbox and everybody pretending that we're going to play with marbles and everything is going to be okay, because it was literally a monologue on his part of erroneous statements being hurled and put on the record about things allegedly that I was supposed to have done or said, right, that potentially could cost me my job, and so, no. It's going to take a little bit more than a meeting in a room to get me to do anything with Todd Gedamke.

MIGUEL ROLON: Again, one last time, probably what we could do is to remove from the record what Todd just said, if Todd wants to do that, and that will get a move in the right direction, but I don't think that you are going to meet with Todd, in the mood that we are now, any time in the next two centuries, but, if we can go to lunch now and think this over and then come back and talk about something else, talk about President Trump, and we all have one common enemy, and then, seriously, I would like to break for lunch, Mr. Chairman, because they are waiting for lunch, but Todd wanted to say one last thing before we go to

lunch.

CARLOS FARCHETTE: Todd.

TODD GEDAMKE: Miguel, you just basically said what I wanted to say, in that my primary responsibility is to the fishers, and I think that -- I apologize to the council for raising the tension level, but I cannot keep my mouth shut anymore.

I will not retract my statements, because the statements that I made were carefully written down for those exact statements that were made at DAP and FAC meetings in front of numerous people, and I don't know if they get it transcribed, but, if there is not a record of those, at these council-funded meetings, but every statement I said was from there.

I wasn't going to keep my mouth shut anymore, because the fishermen -- The decisions that are being made are damaging the fishermen at this point. What they want to know is -- The questions that Tony is asking, these questions have been asked, and this plan was designed to answer that question.

The last thing that I just want to say too is the port sampling program, I would not cooperate -- The statement was made that I don't want to cooperate to risk our port sampling program, and I want the fishermen to be absolutely clear to understand that the port sampling program is -- A port sampling program is not a port sampling program is not a port sampling program.

DPNR is conducting a biostatistical port sampling program that has zero ability to answer the questions that I am answering with this study. If you want to know about behavioral changes, or if you want to know about average landings during this time period, the existing program has no ability to do that, and the fishermen need to know this, because they are asking for these answers, and the only way of getting at this right now is through a differently-designed study. Mr. Chair, I thank you very much for letting me make the final comments.

CARLOS FARCHETTE: All right. We are breaking for lunch. We will be back at 1:30.

(Whereupon, the meeting recessed for lunch on August 16, 2017.)

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August 16, 2017

WEDNESDAY AFTERNOON SESSION

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The Caribbean Fishery Management Council reconvened at the Courtyard Marriott, Isla Verde, Puerto Rico, Wednesday afternoon, August 16, 2017, and was called to order by Chairman Carlos Farchette.

CARLOS FARCHETTE: We're going to continue on to our electronic reporting project. By the way, before I go there, I want to apologize to Alida. I had to shuffle the schedule around a little bit. After electronic reporting, I have to do the ecosystem plan, because the lady has a flight to get out of here pretty soon, and then we're going to do Alida. Miguel.

MIGUEL ROLON: Ruth, not to start any discussion any more, but, on behalf of the council, I wanted to officially apologize to you for what happened this morning. We have known you for a long time, and please accept my apologies, and I am talking, I believe, on behalf of all the council members, people around here, and so please accept this apology, and we will continue working together for a couple more years.

RUTH GOMEZ: I appreciate that. Thank you.

MIGUEL ROLON: Okay.

CARLOS FARCHETTE: All right. TNC.

ELECTRONIC REPORTING PROJECT UPDATE

ALFREDO SFEIR: My name is Alfredo Sfeir, and I'm the CEO of Shellcatch. My company operates in Chile, Peru, Mexico, and we're based in San Francisco, California, and now we're happy, very happy, to be in Puerto Rico.

We are very grateful to NOAA for having us work on this initiative, and we're very grateful to the Nature Conservancy, who brought us onboard with the team, and we're also extremely grateful for DRNA, who, without them and the fishermen, we wouldn't have been able to develop this project, and so a special thank you to the fishermen. I know there is some of you present here, and one appears in the photo, but this has been work -- It's not been really only Shellcatch work, but it's been DRNA, the laboratory's work, and the fishermen's work, very intensely.

Just to tell you a bit more about the company, we've been working with the Rockefeller Foundation and with the Hewlett-Packard Foundation and with the governments that I mentioned before and other organizations, and we have over 250 boats in Mexico monitored with video, and we have electronic reporting and traceability in these three countries, and now we're working with all of these lessons learned, together with all of the new things that Puerto Rico and the Caribbean give us, which have been -- We have learned a lot. We've had to learn a lot here, and we've been very happy with this experience.

Just going for the basis of maybe many obvious things, and I'm sorry for some of them being way too obvious, but, as in most of the tendencies in Restaurants, Open Table, Airbnb, Uber, all the things that most of us use, they went from paper-based to now electronic-based, and this is what we've been working on here, particularly with this landing document.

What I have never seen -- Well, I have seen two instances where fishermen are very happy. The first one has been when they make more money for their catch, and the second one is I've seen it here, when they say that we're going to automate this landing document.

I don't want to bore you with the details, but some of the people have already seen this, like the progression of this, a few months ago, and we want to talk a bit about the subtleties of the methodology. We decided to work strictly with a very small number of fishermen, to make sure that we could adapt this and make mistakes on the lowest scale possible, and that's why we haven't included all of the fishermen. Basically, it has been because we've been deploying this until we really feel like it's ready, and it's ready now.

Some of the issues, just to comment to you, which made people very nervous was privacy. For example, with a mobile phone, you can get access to their pictures, and you can get access to their geolocation. You can get access to everything, and we had to shut that all off, because the privacy issue, the trust issue, which is so needed for these mobile applications to go in and be deployed, this was definitely our first stepping-stone, and so even we wanted the fishermen to register with their picture, but, other than being a useless feature for this, it was really getting access to their photos, and we said, okay, let's take it all out let's make this work at the most private level possible and then deploy other features if they get approved in the future.

The system install wasn't trivial. Basically, we launched the install from DRNA. They are the ones who send the invitation and not us, and then we had to take several days, weeks, to test that. When the fisherman receives that invitation, they were able to download the app with iPhone or with Android or using the web.

Things such as email confirmation, they wanted -- As soon as they give the report, they wanted an email confirmation, and that was a really important feature. Another feature was that sometimes you have other fishermen on boats that are fishing together with the person who is reporting, and we created that additional feature.

The fishing gear feature was a particular one where they wanted us to start with the fishing gear, just in case they had fished more than one species, and so that facilitated their feeling of the document, and then they wanted graphs. They wanted to know information about what their catch was, because they didn't have access to that information, and restrictions and alerts.

I will try to be very brief. The application centers its intelligence with user administration, DRNA, and I will show you a bit more later, but just very briefly, it administers the species that are in the system, and it sends the invitation out to the fishermen, send the species list, so the fishermen have access to all their species, and then the fisherman inputs the information back into the database. Then there is quota administration, and there is a dashboard, which I will show you, and there is search functions. All of this then gets exported to NOAA. The data is revised and then exported, which is the final phase of this work.

Some of have been wondering, and we have the Android app, and we have the iPhone, and it's compatible with all internet devices, and we first wanted to concentrate on Android, and then we went into iPhone.

Just to show you the mobile interface, you have a normal user and password after they download the app. You can go into the app stores now and you can download it now if you want, during the meeting. Very simply, it goes into the date of fishing, and it automatically knows what fisherman you are. You go into the calendar and say when you're fishing. Then, if you have an additional fisher or more fishers onboard, you can put their license number. That way, that accounts for the additional fishers onboard.

Then the fishing gear, and then an important point, or, again, another subtlety, but I guess sometimes they say the devil is in the details, but it's basically this addition to the species. They said let's give them an additional option for them to write in the species, because sometimes they might get frustrated at the actual photo or the actual species on the list is not there or they have another name for it, and so let's give that headache to DRNA. Let's let the fisher put in what they need to put in.

Then these are all stuff, inputs, from the actual document, the landing document, how much gear, weight, price, time of fishing, and then we've got that map with the squares. This is automatically -- Some fishermen were like, why do I have to put that? It's for Nassau only, and now we've enabled it for it be automatically only if the fisher puts in the Nassau fish gear type.

Then the less than nine miles or more, daily or nighttime fishing, and then this is another feature that the fishermen actually -- They helped us, and they guided us, and so we want to register another species, and so I don't want to fill up everything again. Most of the stuff is the same, and so you click on "yes", and then it's all pre-filled, and so they can actually go in and change what needs to be changed. This, for them, was a big headache, and, actually, it really made a difference, and so thanks, fishermen, for that.

Then there's a message of, hey, you've registered your fish, and now you're going to get an email. By the way, it says to go and check out your logs, because you can see, over time, your aggregated fishing.

We go to one of the areas of the app where it's just the basic information, but, as you scroll down, you have a calendar of the green dots of where they actually fished, and so, when you basically go in and you continue scrolling down, and it's a basic graph of pounds of what they've been fishing, and, also, it's a search bar, and so you can go and search by date. Also, there is a translation button, and so, if Spanish is not your thing, then change it to English. Also, this was a very good suggestion from DRNA. Before the fisher decides that he or she is so mad about this application, which I don't think, because we co-created it, but they can click on here, and they can say, hey, this is the problem that I see, or this is how it can improve, basically.

Then this is something that was obvious, but we sort of kept it

until the end. We had to go through these other issues and bugs before, and this is basically editing. We could only edit on the webpage, because they also have the web interface, but we migrated that to the actual cellphone, and so they can click on the whatever input they have of whatever they already inputted on the cellphone, and then they see what they have inputted, and so, if they made a mistake or anything, they can go into the edit button and they can edit and change, and so, that way, they can feel that they can actually input.

A lot of the input here as well you have to do with -- You helped a lot, and so I have to say that as well, and so we're going towards the end of the mobile app. This is another part that -- It's another subtle, important thing, which is basically, if the cellphone doesn't have cellphone coverage, then you can't upload the data, and so what it says is this is an area where -- It tells you the amount of fishing data that you haven't uploaded.

Once they go back into cellphone coverage, it uploads automatically, and so it explains there that this information will be sent when you have internet.

Then we go now and move to the DRNA platform, because this wasn't like Shellcatch had to go in and deploy just a Shellcatch app and do everything, but we had to make sure that all stakeholders had maximum control and maximum empowerment, or I don't know how you want to say it, like operation capability, on the platform, and we start with, for example -- They go into the website, and we call it the port, which is where they land.

They can add or delete species or change the name or put the quota or create alerts here. They can add collaborators, and so, if you have Marta, Lucia, Wilson, all of them who they are active with the fishermen, and Ricardo and Daniel Matos can add them. They can add themselves here, and so more people can work, and it's just not one person on a computer. You could have many distributed people working.

Then we have the fisher registry, which is how they add a fisher. They input all the details, and this is the place where they add the boats with their link with the license numbers, and that's where they link, and that's where they send an invitation automatically to the fisher, and the fisher receives that invitation on his or her account, and then they download the app, or, if they don't like the mobile app, they go to the webpage, and they can work on the webpage on a tablet or just a simple webpage.

This is the nice part. We know that we can do a lot more, and we look forward to doing so. It's like the data analytics. What you can't measure, you can't manage, and I heard a lot of that here with the previous presentations. It's a hard act to follow, because of such great data.

These are the first graphs, and how many times has a certain fishing gear been used, and how many pounds are coming out? What is the fishing activity? We are going to see, over time, that the managers have different algorithms and different ideas as to what they want to see every day, and the beauty of the cellphone, as you know, is that, as fishermen want to really not use that piece of paper, this information will be relatively real time.

Then searching, and this is -- Instead of going through all the paper now, you can search by fisher, by gear, by weight, by date. This is where the editing button -- This is the trash button, and this is the, hey, I will send this to NOAA button, and so this is the NOAA page. This is the ones that they have decided that these are ready to send to NOAA.

Then we're adding other features that have not much to do with what we've been asked to do, but we want to take advantage of the mapping capabilities. Some fishers don't like to add manually where they are fishing, but I guess that we will work that out with DRNA, as they have been guiding us as well with this process.

This is just the end. Now that we've gone through the functionality, we're going to now go into another round of design, and this is just a preview of how it's going to look going forward soon. Instead of squares, you're going to have circles. Anyway, I want to thank you very much, and I'm open to questions, and again, thank you very much to the fishermen for putting in so many hours into this, and thank you to the DRNA for being so proactive.

These things are so difficult to implement on an institutional level, and they have put all their people, all their hours, on this. Again, tomorrow, we present this in Mayaguez to a larger, broader number of fishermen, and we are completely, as a tech company, open to changing and adapting and improving constantly, consistently, with the different stakeholders, and so thank you very much again for letting me present to you.

CARLOS FARCHETTE: Thank you. Marcos.

MARCOS HANKE: I am really happy to hear and to see the presentation, especially knowing that the DNR is a key participant on this. This is a big accomplishment for Puerto Rico to step up and to lead in the region to finally do this.

Now, I have recommendations, just to maybe do it a little more efficiently, and one thing that I think we are missing that I think is important is, once we determine the gear or the style of fishing, and I don't remember which way you have the wording there, but there is different modalities of those gears. For example, I can be bottom fishing drifting or anchored or chumming, or there is different modalities, but, basically, it's -- But that is very important, in terms of evaluating the performance of each gear. This is something that maybe should be included, and there is many ways to do it, and I would be happy to help.

ALFREDO SFEIR: Thank you.

MARCOS HANKE: The list of species that the fishermen have access to identify and to report, maybe it would be nice that each fisherman, the time they use it -- Because, most of the time, they're going to be performing a similar style of fishing, and those species are going to come up as ranked naturally, right, the red hind, coney, yellowtail, whatever, and that style.

The same system should record that memory and list them up ahead. When the fisherman looks at the table, those common species for your fishery is there, and that's the ideal. If that is not possible, maybe it can be, with the fishermen, the list for bottom fishing, for trap, or for whatever can be created in an ordered manner.

One thing that I saw on the application, and I don't know exactly how the pictures work, if they are interactive, if you touch them that you have more information, or it's just the picture with the name, but I'm going to use an example. The coney that is in there is yellow color, and it's in the stage of the yellow color.

There is seven colors for the coney documented, and there should be a little note or little pictures right there with the two dots on the lower lip or something that helps the identification that once this data comes out that it's a clear data and it's a tool for the fishermen to get educated and not just by saying coney, but, if he's doing it all the time, he's going to have

the scientific name and the English name on it, and it turns out to be outreach and education or a teaching tool.

Something else that I think will be very helpful for the fishermen and we will engage them quicker into using this mechanism is to provide tides, moon phases, GPS signal, in case of like an emergency, something similar to Navionics or any navigation screen that they can use to go fishing that the cellular -- We use it now, but maybe just use yours, and then we can make the report. In the meantime, you already have that running. I think that would be very helpful, but what you guys have is three-hundred-million years ahead of what we had in the past, and thank you very much.

ALFREDO SFEIR: Marcos, this is what really excites us, are these ideas that you're presenting, and our drive is to have that option. I have taken copious notes, and I want to basically work on each one of these points, and we want to go that way, and thank you for sharing that, and I look forward to exchanging information, so that we can get more of your ideas.

The tides and the moon phases, that is awesome. It's going to be of great use for them. We have had a lot of issues -- The species section has been a difficult one, given the language, the different names, and the photos -- I completely agree that we need to improve there in some sort of way. We have to.

We have sort of shared with DRNA trying to see how we can work together in creating the best photo possible, and we want to go to a point where we want -- But we didn't want to have access to their photos, but we wanted to get to a point where the fisherman takes a photo of the species and automatically it determines what species it is, because there is that capability now, and we can do that, but, once the fishermen -- One of the test fishermen saw that we had access to their photos, and they backed off, and they said, no, you can't have access to my photos.

There is a lot of stuff that we want to insert in near-future developments that -- The species link with gear I think is mandatory, and I think what you said, in terms of facilitating them, the link between the actual gear and what species correlate with that is absolutely mandatory. We have to do that, and, the different gears, we need to make it more sophisticated, the sub-descriptions, or the sub-types, and so point very well taken. Thanks.

CARLOS FARCHETTE: A follow-up and then Crespo.

MARCOS HANKE: Just a follow-up, and maybe, whatever mechanism you guys decide, an instructive way -- Just give us the guidance of the fishermen that want to give you the pictures can give you the pictures, and it's not one or two fishermen, but just something aligned there, and so, if you want to upload pictures to improve this platform, here is the way to do it.

The other thing is time, and, if I decide -- Maybe you are not looking for that, but if I decide to say that's the fish that I caught, boom, and you have the time of the day that I caught the fish, that's a capability, and that's very important for many of the fisheries, because, later, Daniel Matos and the people from the lab can use that timing with the tides and with the moon and with the conditions and start to have very valuable information.

The charters, we are, under our regulations, commercial fishermen, the regulations of Puerto Rico, and are they included? There is a space for that, in which we will account for number of clients, target species for them, and I don't think it's too complicated to add it, and it should be considered, and this is something that I have been asking for a long time. Thank you.

ALFREDO SFEIR: Again, fantastic. Time of catch, that's no problem. We can add that tomorrow, and I'm very excited for the potential of scaling this to where you guys want to take it, and so thanks.

CARLOS FARCHETTE: Nelson.

NELSON CRESPO: Alfredo, I am happy. I am really happy, and I am more happy because this was made with collaboration of the fishermen, and that's the key to maintain the fishermen engaged. Some suggestions that I can make to you is the lab measures the effort by hours fishing, and I suggest you to include the weather and current conditions, because sometimes you spend all day and you catch a little bit, because the current is hard and the weather is hard, and nobody takes consideration of that before.

Another recommendation is does this project have a negative report when the fishermen don't realize any fishing during one month, like the reporting book of the lab?

ALFREDO SFEIR: Nelson, by the way, was our first web tester, beta tester, and iPhone, and so he was very patient, and he's taken so much time to work on this. The first one, in terms of

effort, we're going to definitely see how we do that with weather, and that sounds pretty amazing, and we will see how we can correlate that. It ties in to some of the things that Marcos was saying, and so it's very complementary, and so thanks for that.

In terms of the negative report, what we're considering is after two weeks -- I think it's a month, but we're thinking two weeks of not fishing and then it sends an alert, basically.

NELSON CRESPO: Perfect.

ALFREDO SFEIR: Thanks for all of your support, Nelson.

CARLOS FARCHETTE: Velazquez.

CARLOS VELAZQUEZ: Thank you, Mr. Chairman. (Mr. Velazquez's comment was in Spanish and not transcribed.)

CARLOS FARCHETTE: Miguel.

MIGUEL ROLON: What is the schedule for the implementation, full-fledged, of the project?

ALFREDO SFEIR: It's basically starting, kick-starting, tomorrow, the kickoff, and so we have the iPhone, and we have the Android, and we have the web. Everything is ready, and DRNA are the ones hosting a small workshop tomorrow at the Holiday Inn in Mayaguez, with some of the fishermen, and so, officially, it's tomorrow, and so the application is already on the web. I mean, it's up on the stores, and what DRNA has to do is basically send the invites to the fishermen. That's what they have to do.

MIGUEL ROLON: The information will go directly to Daniel, or will it go to a place where it will be processed and then sent to Daniel?

ALFREDO SFEIR: That's a great question. Basically, first, it goes to Daniel's team, and Daniel has to establish with -- They are organizing themselves now, and this was supposed to be done on the 30th of August, and we decided to just finish it as soon as possible, and so it's running now.

Basically, we've been -- The past three weeks, they've been in test phase, and they've been learning how to use the system, and they've been learning how to process the data, and so, until they're absolutely ready -- They have to give us the ready

signal that they feel comfortable, and then we need to sit down again with NOAA and have them -- We have all the data from NOAA. We have the API and everything, but we just need to have a session with NOAA and then have DRNA, the lab, press the export button, but they are three weeks into training.

They're also giving their feedback, but we have ended the cycle of feedback, and so I think they're being smart, in the sense that they're doing this progressively instead of like doing sixty fishermen immediately, but I'm sorry to go so -- I am being Latin American about my answer. I am responding very long, but that's my DNA. Basically, the answer is it gets processed at Daniel and his team, and then it goes to NOAA.

CARLOS FARCHETTE: Okay. Damaris.

DAMARIS DELGADO: I just want to congratulate you. I haven't met you in person before, but I have heard a lot about the project and have been informed by Ricardo Lopez and Daniel about the project, and so I also share the happiness of the project, and our vision is to aid the fishers with this application. Instead of having a cumbersome process with the written and printed documents, have something that could be easier for the fishers and more agile for everyone, and so that's one of the benefits of the project, and I look forward to having it implemented.

As you said, we don't want to force anyone, but I think, myself, that it will be much more helpful to use this tool than the traditional way of doing business, and so all fishers are encouraged to integrate into the system once it's already in full enforcement, and so thank you for the support of everyone.

ALFREDO SPEIR: Damaris, if I could just say thank you for establishing a culture of working and being open to rolling out technologies, and it has been a very short time period for the laboratory to intake this technology and to rearrange their organizational structure to work with this, and so congratulations on the culture of your organization.

CARLOS FARCHETTE: I have Ruth and then Velazquez.

RUTH GOMEZ: First, congratulations. I know that's a major undertaking. TNC was the driving force behind this, and is there any conversation about TNC and the Virgin Islands possibly doing something like this for the USVI fishers?

ALFREDO SPEIR: For us, that would be a dream come true. We

hear that there is a possibility of scaling, and that's one of our main -- Our first main objective was to make this run properly, and the beauty of it is that, if we could scale this to the Virgin Islands, it would have a lot of the -- It seems to be that fishing is similar, and so it would be very replicable, and so I am not involved in the conversations, but I know that TNC is talking about this, and apparently there is some conversations about how to expand this in the region. I think the Virgin Islands would be an excellent next step, and I hope you can help us push it that way. That would be amazing, and I would really appreciate that. I think TNC would also appreciate that very much.

RUTH GOMEZ: Maybe a letter from Planning and Natural Resources to whoever it is at TNC and St. Croix asking and explaining the need in the USVI would help the cause?

ALFREDO SPEIR: That's great feedback, and I really appreciate that, and I am going to express that to my boss and go that way, suggest that strategy, and be at her service to do that. Thank you for that. Can you repeat once again the organizations, please?

RUTH GOMEZ: The Department of Planning and Natural Resources, which is the equivalent to your DNER here, and if there is something that I can do, coming from the division, just let me know, and the letter would come from Commissioner Henry to whoever it is at TNC, explaining that there is obviously a need for it in the USVI.

CARLOS FARCHETTE: Okay. Miguel.

MIGUEL ROLON: Will the fishers be able to see how the statistics are playing out? For example, if I'm a fisher and I put together my information and send it up, can I see summaries of the information as to, for example, how close are we to the ACL of a particular species and all that? Probably I missed it, but one of the things that we did, the eight councils, is we had a meeting that Carlos and I attended in Oregon.

One of the things that the fishers from Europe and the United States were really enthusiastic about was the possibility of them seeing electronically how their fishery was behaving. In some cases, they can see the depths where the majority of the fishermen are fishing, and they can see how close -- They have kind of a dashboard, and they can see how close they are to a particular ACL, and would that be a possibility in this type of project?

ALFREDO SPEIR: Absolutely, Miguel. This is actually, I think, one of the least -- The issue that has been least taken advantage of, and I think this is where we can mostly improve. The beauty of this is that, if we get the buy-in from the fishermen, and we seem to have some really good support initially, obviously because there is a close link as well and there is a need for this, but, once we get this running, the beauty of the app is that, once we get this feedback, we can basically modify the feedback we give to the fishermen, and we basically feed the main database with that additional information, to make sure that the fishermen can see this and other things.

We need to make a list of priorities of which are the things that are going to be most impactful. Now, we have feedback, which, as you can see, the fishermen can see what they fished when, and they have a graph, which sometimes a picture says more than a million words, but we don't have these correlations, and so adding the data that you already have into the database to create that is -- I don't want to say it's a simple process, but it's relatively easy to scale, especially once you have the data.

The critical part now is to have the fishermen use the app. Once they are using it, we can modify it, and the beauty as well is that it updates automatically, and so you're not stuck with a version right now. That gets updated, and that's the beauty of the mobile app.

All of a sudden, they're going to see this new graph that they didn't see before, and we'll send, hopefully, like Carlos was saying, a communication that says, hey, this is a new feature, or, in the app, a little pop-up that says, hey, now it relates to effort, or it relates to climatic conditions, and that's the sort of stuff we -- That's how this -- This is a very important point, Miguel, and, again, I'm going off like a Latin American, but this is -- This is not a fisherman company, and it's not a commercialization company, and it's not a -- This is tech company.

We're software as a service, which means that all the development that we do in the cloud gets transmitted into the cellphones and gets adapted, and so you're not stuck with a fixed jacket, and we can -- Actually, we support maybe a monthly meeting, or a meeting every two months, to say, hey, I think the features should go here, and that's what we want to get to. We would love for you to be part of a meeting where we say, hey,

this is where I think the app can improve, like the stuff that's been said around the table, and this is where -- This is the never-ending process.

Then, after you get that graph, you're going to say, well, what about if I do my algorithm about this, and then it goes to the next graph, but that's the process, and so it's open there to do that.

CARLOS FARCHETTE: Okay. Thank you. Ruth, when it comes to St. Croix with TNC, whatever you need from my side, I have pretty good access to someone at TNC, if you want to just give me a buzz or send me a text, and I will talk. Thank you.

ALFREDO SFEIR: Thank you.

CARLOS FARCHETTE: Next on the agenda is Developing a Fishery Ecosystem Plan.

DEVELOPING A FISHERY ECOSYSTEM PLAN - PRESENTATION ON LENFEST/PEW APPROACH TO FISHERY ECOSYSTEM PLAN DEVELOPMENT

TIM ESSINGTON: Good afternoon, everyone. While the PowerPoint is being put up, I just wanted to say a few things. First, thank you, Chair and Vice Chair and the Executive Director and everyone else, for inviting me. It really is a privilege to be able to speak to you about the work that we've been involved in in trying to provide guidance for fishery management councils to develop fishery ecosystem plans.

I will just tell you a little bit about myself. I am a Professor of Aquatic and Fishery Sciences at the University of Washington. As such, I do not pretend to be an expert in Caribbean fisheries or Caribbean biology or ecology. I have learned a ton in this meeting, and so I'm not going to certainly try to tell you specifics of best practices. What I am hopefully going to try to do is sort of provide a very generalized roadmap, which I hope you find very useful, to try to develop a fishery ecosystem plan that will help you adopt an ecosystem approach to fisheries management.

The broader context here is that I was asked, along with my colleague, Phil Levin, who, at the time, was at NOAA Fisheries, and it was to convene a group of experts to help fisheries management councils figure out how to make fishery ecosystem plans that actually lead to some sort of management action.

Several fishery councils have been effective at writing fishery

ecosystem plans, but a lot of them didn't necessarily tie to any type of management action, and so what we wanted to do was go from principles all the way to action.

Our approach was threefold. First, we convened a group of task force members, which were people with very, very broad expertise, and it's not important that you know all the individual names or whatnot, but we had biologists, and we had people who do stock assessments or maybe do some type of modeling, and we had economists, and we had anthropologists. We tried to have people from various parts of the United States, and we also tried to have a lot of people who had a lot of history of engagement with the fishery management council process.

Right away, we were going for breadth of expertise, but also, importantly, people that knew how fishery management decisions were made. In addition to this group, and I don't have a cool slide with photos, is we had an advisory panel, and the advisory panel was critical. It consisted of NOAA senior scientists, several NOAA liaison scientists, people who were past or current members of fishery councils, and it was their job to keep us grounded in reality, because our main target, what we wanted to produce, was a document that was useful for you.

We didn't want to produce scientific papers, and we didn't want to produce things that various interest groups were going to use, and we wanted to produce something that the council could use to help their decision-making, and the advisory panel was fantastic at making sure that we did that.

Our approach then, using this body and the advisory board, is we went around to various regions of the continental United States. We didn't have the budget to travel to Hawaii or the Caribbean, unfortunately, but what we did is we met with local managers, and we met with council members and SSC members. We met with stakeholders, the people who are engaged in the fishery, and we asked them a lot of questions.

We asked them, what would you want to see moving forward, in terms of ecosystem-based management? Why isn't that going forward? What would be the steps that you think would be most effective to get these things going forward, and we accumulated all of that information and put that into a very generalized framework for making decisions.

What I'm going to talk to you about is not sort of a very prescriptive approach that says you have to do this, you have to

do this, and you have to do this, but rather it's a framework that should help guide you through the process.

I am just going to start off with really our main points first and then kind of back-fill some of those. The first is that trying to what we call operationalize ecosystem-based fisheries management, which is sort of extending beyond what you talked about already yesterday and today about building fishery management plans, but also trying to make plans that also tackle bigger-scale issues and trying to turn those beyond just a description of the ecosystem, but something that actually leads to action really requires a structured planning process that is actually intended to lead to action.

If you walk into it with the idea that you're going to create a document that's going to sit on the shelf, that document will probably just sit on the shelf. If you go into it with the idea that we are creating a document to figure out how to make decisions, that is the framework that is going to lead to an effective fishery ecosystem plan.

Fishery ecosystem plans use existing tools, and so both scientific and policy tools that we have presently are perfectly sufficient to start making progress. Fishery ecosystem plans are an ideal place to integrate the multiple goals that the regional fishery councils are trying to achieve, and that is they want to provide for the social elements of the fishery, and so whether that's the livelihoods or the economies of fisheries, but it's trying to promote the economics of fisheries, and so making sure that that markets are working properly.

Then it's also making sure that ecological goals are being met, and so all of those things are important, and all of those things can be simultaneously addressed in a fishery ecosystem plan, where it's harder to maybe do that in a fishery management plan.

One last thing is that, as you all, making any decision usually involves some sort of tradeoff, and, when you're doing tradeoffs among these very broad-scale things, like socioeconomic and ecological goals, you need sort of a transparent framework for doing that, and these fishery ecosystem plans that we're talking about are really sort of designed to sort of help promote transparency in making those decisions about tradeoffs.

The term "ecosystem-based fisheries management" turns out to be incredibly loaded, and this is not something that I had realized walking into it. I found that, when I used the words

"ecosystem-based fisheries management", everybody is in favor of it, and it's because it means something totally different to every single person, and that was true even among our task force, and so we actually had to spend more time than we thought actually figuring out what collectively do we mean when we say we are trying to advance ecosystem-based fisheries management.

What we landed on was a very broad view of fisheries management that says, well, a fisheries system consists of a bunch of different things. It consists of all the biological components and biophysical components, and so that's the habitats, and it's the species. It's all of those types of things that are very commonly considered as part of the ecosystem-based fisheries management, but it also definitely considers the people that are involved in the fishery.

It's maintaining the livelihoods of fishermen, and it's maintaining fishery-dependent communities and making sure that those are sustained. It's making sure that the needs of processors are being maintained and, if there are important cultural values of the fishery, making sure that those are being maintained.

Then, of course, there is a governance structure, which we all know is very, very complicated, all the way from the federal level and multiple legal statutes sort of lie on top of fisheries and there are all sorts of interactions with between states and regional-scale management actions.

These are all independent systems, but they are all connected to each other, because what people do affects the biophysical, and what the biophysical does affects the people as well, and so it's a very complex system, and, really, what we're talking about in an ecosystem-based fisheries management approach is starting the decision-making from the framework of the broader system.

What this does is it helps fill in the cracks of some of the things that conventional fisheries management can't catch. We heard this morning, for instance, the idea that one of the goals of fisheries management is to maximize long-term sustainable catch, and that's a great goal, but there's lots of other goals that we have of fisheries that aren't met by that, and so, for instance, once you figure out the catch, who gets to catch it? How do you divide up that catch fairly and equitably, and those are hard questions, but also incredibly important questions.

If you have a species that plays a really important role in the

ecosystem, how do you have fisheries for it while maintaining its role, and so that's, again, very much out of the realm of a traditional fishery management plan.

We are taking a very broad view, and this is why we think that a fishery ecosystem plan is a great way to think about the so-called triple bottom line of sustainability. We want sustainable economies and sustainable cultures and societies and sustainable ecosystems.

We made our recommendations with three key considerations. The first is we understand that councils are already incredibly busy and overwhelmed with the amount of work, and so we didn't want to create recommendations that were going to lead to more and more work, and so, hopefully, the recommendations will actually create some efficiencies in terms of the types of things that you have to do.

We also recognize that fisheries systems are really complicated. Understanding these connections are not easy. Once you figure out a connection, those connections might change, and that complexity leads to a lot of uncertainty, and so you're going to be making decisions when you don't have perfect knowledge of how the system works. Then, lastly, we wanted to make sure that our recommendations actually fit under the U.S. law, and so that was obviously very, very important.

What we arrived at is taking a very -- We decided that a fishery ecosystem plan is something that has really three kind of main things. First, it's an adaptive process. It's a living document. It's something, because you're going to be making decisions under this specter of uncertainty, but, once you make a decision and follow the consequence of that, you're going to learn something about the system, and it would be totally appropriate then to update the FEP through an amendment procedure or put a timeframe on the FEP, so that you can continually improve it.

Ultimately, the goal is to produce locally-based solutions to address high-priority problems, and this is probably the key element of what we view an FEP can deliver. Then, finally, it's kind of an umbrella document. It can address systemic issues, and so issues that span that entire system that I showed you in the previous slide, that can't easily be covered in a single fishery management plan.

What we took is a generic planning framework and viewed it through the lens of fishery ecosystem issues, and I am going to

walk through it relatively briefly, though I will point out that, over in the little alcove over there, we have a set of the reports, where you can read quite a bit more about it. Also, online, we have an extremely -- I guess it's digitally very thick, but what we call the implementation volume, and that gives a lot of guidance on what are the tools that are available for every individual step and what are some of the pros and cons of using all these different tools.

I am mostly going to focus on the first three steps of the FEP process. The first is just sort of figuring out what's the lay of the land presently, and so what's the current status of the fisheries system, and that would be looking across all of those different elements that we talked about, and so it might be considering what's the state of the habitat here and are there key threats due to say climate change or further habitat loss and invasive species, and are there serious economic problems that are being brought about by a set of regulations or the current state of the ecosystem?

All of those types of things, you would want to make an inventory, both at the state of the system and then what are sort of the key threats that you're sort of facing.

Then, from that, there is this process of asking where do you want this fishery to go and what are the problems that you really want to solve, and this goes from really high-level vision statements, from 30,000 feet, sort of describe what it is that you want, but, ultimately, working down through a series of prioritization of coming to one or maybe two key issues that a fishery ecosystem plan is going to tackle.

The key thing of what I just said in there was the prioritization, and so anyone looking at any fishery ecosystem can easily become bewildered by the number of potential things that could be improved, and it's going to be impossible to fix all of them at the same time.

What we're recommending is to prioritize, to look at all the things that are happening and then choose the most important ones that can have the biggest impact and benefit the most people and target those first and then make a plan of action to try to address that thing.

Then, once you have prioritized the issue and have some very, very specific objectives in mind, then you ask how are we going to do it, how are we going to get there, and then you have to come up with various performance measures and what would a

successful outcome look like. Then also, critically, is coming up with lots of different alternative ways of getting there, and the council, of course, is very familiar with choosing among alternative management measures.

We're suggesting going even a little bit further of really encouraging a lot of creative brainstorming when it comes to potential alternative solutions and involving a lot of different people in that conversation of trying to figure out what are the possible different solutions.

Then what you can do is do some evaluation of what are the likely outcomes of those different alternatives, and there is going to be pros and cons associated with all of them, but then that comes back to you, the council, to try to choose among them, and obviously there might be some recommendation of some people that says that Option 1, 2, and 3 are really great, and Option 4 seems like it has a lot of risk, or something like that.

The key thing is you look at a bunch of different outcomes, a bunch of different alternatives, and you sort of evaluate all the different outcomes across a bunch of different dimensions, social, ecological, and environmental, and that becomes the basis for decision-making.

Then the last two I'm going to go super quick, because they're just do it, do the thing that you said you were going to do, and then, lastly, evaluate as you're going along whether or not you're achieving the things that you hope to achieve, and the whole thing happens in sort of an adaptive loop, where you start at the beginning and work your way through.

As you're learning about the system, you might want to make adjustments, and you might want to make adjustments at fairly quick time scales, and so maybe right away, after you put in some sort of action, you might realize things are not going the way you had hoped. In that case, you would want to adjust relatively quickly.

Then, over the longer scale, maybe over ten years, you might reveal something really important about the connectivity of parts of the system. Maybe you didn't realize that people that fished in one sector, when you put in regulations, that they were going to move to a different sector, and that is now causing a new conflict that you didn't have in the first place. Then you would just revise the whole thing all over again, and so, when we talk about this being a living document, this is

what we mean, in terms of this loop.

What we think these what we're calling next-generation fishery ecosystem plans -- They could potentially help overcome what have been claimed as really significant barriers to adopting an ecosystem approach to fisheries management.

Some of those challenges is the enormous complexity of fisheries systems, and we try to overcome them here by using a suite of indicators, so we're not looking at every little thing, but we're looking at a few things that we think tell us something about what is happening. Then this prioritization step of just realizing that there is lots of things that we can work on, but we're just going to pick a few important ones and move forward on those.

There is always going to be uncertainty, but we deal with that by having a very structured process to address that uncertainty, and we have an adaptive management process, and so, as we learn more about the system, we will change what we're doing.

There is the perception that there is a lot of cost, and I hope if I get any main point out of this presentation, it is that ecosystem-based fisheries management doesn't need to build a ginormous ecosystem model. You can move forward with tools that we have today, and hopefully it will streamline management, because this can pick up a lot of the issues that are maybe missed in fisheries management plans.

The lack of clear objectives has also been a criticism of why ecosystem-based fisheries management hasn't moved forward, but obviously we put objective setting front and center in our FEP plan.

I am going to close this with a couple of key things. The first is that this group realized that stakeholder participation throughout every step of this loop is incredibly important, because a lot of what we're talking about are not technical or scientific issues, but they are issues about values, and it's an issue about figuring out a lot of the local knowledge that stakeholders have about the system, whether it's about the biological part of the system, the market-based part of the system, how people move across different fisheries, maybe to support their livelihoods.

All the way from setting objectives to prioritization to coming up with alternative management schemes, this really needs to be done with a very broad set of stakeholders, and so that's lesson

number one.

Lesson number two is that we spent a lot of time looking at the science tools and policy tools to support this, and we found, across the board, that the science and policy tools needed do exist, and the science tools are listed here.

Again, in the implementation volume, we have these listed in far more detail than probably most people are going to want to see, and we looked at existing policy tools that are already used in U.S. fisheries management, and we find that they have been successful at addressing a wide range of systemic fishery issues. It's not simply a matter of just using existing tools, but it's using them perhaps in new combinations, in order to reach these ecosystem objectives.

I am not going to talk about this too quick, but just to confirm this. The reason why we knew that the tools existed is we looked at a bunch of case studies from around the U.S. and around the world, and the key thing is that no case study did every step that we talked about, but almost every step was done somewhere, and so, what we were proposing, none of those things were really impossible.

We also noticed that sometimes the steps were done out of order. In some cases, we actually knew it created a lot of management costs, because people had to go backwards before they could go forward again, and probably the main thing is some sort of explicit prioritization step was commonly missing. In fact, we really couldn't find much evidence of this, and so we find this as a really easy thing to put forward now that would actually pretty rapidly advance the development of fishery ecosystem plans.

To sum up why would a council want to have a fishery ecosystem plan, it's a vehicle to go from these lofty principles and vision of what an ecosystem approach to fisheries can provide to putting those into action. We can do it, given our existing tools, even in data-limited situations and data-rich situations. It helps address this triple bottom line of social, economic, and ecological sustainability, and it helps us choose among tradeoffs.

With that, I will be happy to address any questions, and, also, I will be sticking around the rest of the afternoon. If people have questions later on, I would be happy to address some then.

CARLOS FARCHETTE: Miguel and then Marcos.

MIGUEL ROLON: Whenever we prepare a management plan, you have to submit it to the Secretary for secretarial review, and you say it's something that we all agree that ecosystem means different things to different people.

However, I would envision NMFS sending guidance that you will check that this is the management plan, because you did this and this and that and you have all the steps, because, right now, some people believe that, if we take a management plan and put it together with another one and wrap it up and call it an ecosystem, then, voila, that's it, which we all know it's not.

I was reviewing your webpage here, and you do have a lot of information based on all the experience that you have there, and so how do you foresee us submitting plans to the system and the system reacting with the approval or disapproval of the FMPs?

TIM ESSINGTON: That's a great question, Miguel. Since I'm not part of NOAA, I don't know the ins and outs of how it's going to be received. I guess what I was thinking, as you were asking that question, is if there are things that -- For one, I think that what you put forward necessarily should be very different from what say New England puts forward, and it should be different from what Alaska puts forward.

An FEP ought to be crafted by the people in the area that are using it, and so the idea that every FEP will look the same and has to have the same check-boxes, I hope we can get rid of that idea, because I think that's not appropriate, and it's not productive.

On the other hand, I do know that there is a push from NOAA to push through fishery ecosystem plans, and I think putting in a fishery management plan and putting the word "ecosystem" in it probably wouldn't make them feel as though you're checking the box.

MIGUEL ROLON: The reason I ask you that, and I don't want to put you on the spot, because I know it's not your goal here, but we were one of the first ones who prepared an ecosystem-based management plan, and it was the late Jack Damon, and it was disapproved that it was not fishy enough. In other words, we were not having the classical approach to fishery management and all that, and that's why it was disapproved.

However, we, at that time, Jack was way ahead of his time, and, after that, the amendment to the law came to be, and four of the

councils were kind of the guinea pigs for ecosystem-based management plans, but I believe that our management plans that we are preparing now, the island-based FMPs, meet the criteria that you discussed, one way or the other, as ecosystem-based management plans.

It doesn't mean that the plan will take into consideration every little element of the ecosystem, but it's a step in the right direction, and certainly I thank you for your presentation, and I encourage the council members especially to go to your webpage and get more information, because, in the next ten years, this is what everybody will be moving into.

Also, I liked your presentation where you have the three circles, because, most of the time, when people were talking about ecosystem-based management, they were referring to the fish and the things that make them ecosystems, but you have all the components of the communities, the socioeconomics and everything, and the governance.

I remember one plan was not followed up by one of the councils, because they were asking for predator-prey relationship models, and they didn't have one, and so they stopped for several years to do that. Anyway, that's all.

CARLOS FARCHETTE: Marcos.

MARCOS HANKE: Thank you for the presentation, and, out of the presentation, there are many elements that are very instructive. It highlights to me the prioritization of the mechanism to address ecosystem-based management.

On that part, I think it's very important, because you're going to have to have a start point, right? I am going to use an example of a forage species or a bait fish as an example. I think we should use things that are relevant to the fishing community at first, instead of going to the books and say, okay, yellowtail snapper eats on larvae, mackerel larvae or whatever, for whatever in this book.

Just go to the fishermen and see what kind of bait they target or look for to make the fishery available, and the example is anchovies. It's very important to know about the anchovies and other species of small sardines in Puerto Rico that move that fishery of yellowtail, but, if we start like that, we're going to be adding good judgment to manage our fishery, even though you don't have the whole scenario, and that view, I think, is extremely important.

Also, you're going to start to add -- Okay, the summer is anchovies, and in the winter are -- Then we go to the next step, and you start to make things that make sense to the fishing community and are management tools. Thank you.

TIM ESSINGTON: Just to say that I completely agree with everything that you just said, and that is why we stated in the report and here that there is no way this can work and be effective if you don't have all of the stakeholders involved, from figuring out what's important to what are you going to do about it.

CARLOS FARCHETTE: Okay. Bill.

BILL ARNOLD: I wanted to address Miguel's concerns a little bit. The fishery ecosystem plan is a component of NOAA's, National Marine Fisheries Service's, newly-developed Ecosystem-Based Fishery Management Policy. They want to see fishery ecosystem plans developed, and this fishery ecosystem plan that the council and NMFS staff and others are developing, and it's going to take a lot of others, you should consider this to be an umbrella document.

It's not a regulatory document. It won't result in changes to or additions to the rules and regulations that govern fisheries in the U.S. Caribbean. It will instead provide the guidance and information that is used to make determinations as to how these fisheries should be managed and to better understand the implications of your management decisions, and so, if you say we're going to increase our take of a particular species, it could help to inform what the larger scale implications of that change may be, for example, throughout the trophic web of the U.S. Caribbean ecosystem, et cetera, et cetera, and so that's really what it is designed for.

Dr. Cindy Meyer is going to give the next presentation on it that really is going to give you an update on where your staff is with developing the U.S. Caribbean's fisheries ecosystem plan and so I hope that helps a little bit.

TIM ESSINGTON: Just to add on to Bill's comment, and I agree completely with that. The fishery ecosystem plan is not a regulatory document, but just to maybe give an example of the types of flavor that could be in there. One might have island-based FMPs that are deciding on this is how we're going to come up with ACLs, and we're going to be using historical catches, but let's say one island has been able to have a dramatic

improvement in habitat.

Then what is the process by which then the ACLs are adjusted? Well, that general question would apply to any island, and so an FEP could, in advance, say this is how we think that, if there are changes in the ecosystem that we think are going to affect catches, this is the way in which they ought to be considered in an FMP, but, again, they are non-regulatory. They are more to guide the planning and decision process.

CARLOS FARCHETTE: Bill.

BILL ARNOLD: The fishery ecosystem plan will also be hierarchical, and so it will provide guidance at the local scale, for example east versus west coast of Puerto Rico, and we saw a lot of talk about how these fisheries differ. It will be also at the island level, at which we intend to manage, but, equally importantly, is at the basin level. We are talking a lot about the Caribbean Regional Management Organization and developing a regulatory body that operates Caribbean-wide for at least some species. That is what WCAFC is talking about.

A fishery ecosystem plan at that hierarchical level would help to understand how fishing or other activities, for example in the Windward Islands, might influence catch or the health of the ecosystem or the resources that occupy that ecosystem in the U.S. Caribbean, and, for example, how lobster harvest in the U.S. Caribbean may influence lobster harvest in the Florida Keys, et cetera, et cetera.

That will address, at least to some degree, some of these larger questions that we're generally not getting at that can be really important to understanding what your fisheries mean, and not just on an individual basis, but on an ecosystem basis.

CARLOS FARCHETTE: Marcos.

MARCOS HANKE: One previous discussion about ecosystem-based management, one thing that was highlighted to me, and Bonnie brought it to the table, but you have to make the best of our money, and I really don't understand why, on the guidance, once the proposals of different things that go through NOAA are approved --

For example, they don't put something like make a habitat description or some percentage of the habitat description on the proposal, and let's say that I am diving to do something, but I have the access to that information, but I am not recording it,

but, as part of giving you the money, you should include that, which would be not a big deal, because it's a picture, and it's something else that you can do, like we did in SEAMAP by the Puerto Rican group.

We caught the fish, and then we took a video of the picture on each segment, and that's very valuable. It took fifteen minutes of extra work, but, if you're going to do a project for that, it's going to cost you a lot of money, and this is a recommendation and something to please think about it, because I think we are wasting our effort sometimes in not addressing this.

CARLOS FARCHETTE: Bonnie.

BONNIE PONWITH: Thanks so much for your presentation. This is certainly a direction that I think is going to be very beneficial for the council to be thinking in, and certainly NOAA is investing a considerable amount of thought and effort into evolving toward that more holistic approach to the way that we tackle ecosystem stewardship.

NOAA has generated the Ecosystem-Based Fishery Management Roadmap, and one of the very first things that it has called for is the development of regional action plans for that roadmap, and we'll be collaborating between the Science Center and the Region to capture both the management and the science side of that question as well as with our partners in stewardship, the fishery management councils and the interstate commissions, the states, and the academics, to be looking at priorities and ways that we can leverage the work that we're already doing, but do it in a way that is mindful of those interconnections in these very complex systems.

I like the presentation, and I believe that NOAA is intent on marching in that direction, and it will be an evolution, but I think it's going to bring back very good benefits to the mission of the agency as well as to the stewardship mission of the fishery management councils.

CARLOS FARCHETTE: Okay. Thank you.

MIGUEL ROLON: Along the lines of what we were discussing, Bill, I believe that -- Remember that I mentioned the December 14 meeting of the managers, and this is probably one topic that we may want to address, and so I will discuss it with Graciela, and Bill and I were developing the agenda for that meeting, and this is one topic that perhaps we can address briefly at the meeting,

because this is the future where we want the two local governments and the federal one to work together. We have a lot of information that we can present at that meeting.

BILL ARNOLD: Right now, I would suggest that Cindy present her component of this, which really brings it home, to the U.S. Caribbean.

CARLOS FARCHETTE: Cindy.

BILL ARNOLD: Cindy Meyer is going to give this presentation over the phone.

CARLOS FARCHETTE: Okay. Go right ahead.

STATUS UPDATE FOR THE DEVELOPMENT OF THE U.S. CARIBBEAN FISHERY ECOSYSTEM PLAN

CYNTHIA MEYER: Good afternoon. My name is Cynthia Meyer, and I work for the Caribbean Branch, for Bill Arnold, and I would like to go over the status update for the development of the U.S. Caribbean Fishery Ecosystem Plan, and, currently, Graciela is contributing to all of this, and also Orian Tzadik is also contributing.

The outline for today's presentation is I am going to go over the status update, some of the data challenges that we're running into, our next steps, and a potential motion.

What we've been working on is we've been working on developing a refined outline, just so that we can start having the discussion and moving forward with this, draft a conceptual ecosystem model, just so we can put our ideas down on paper, so we can get stakeholder input.

Mainly, we have been focusing, in this past couple of months, on developing a strategy to facilitate the partner and stakeholder engagement in this FEP development process, as it is absolutely essential to making this plan meaningful and useful to the Caribbean, and we have also worked on data compilation and gap analysis, data inventory, data acquisition, opportunities, and we'll be getting to the data gap analysis and data prioritization down the road a little bit.

The FEP is going to be a guidance document to aid in the development of the FMPs and amendments that consider ecosystem relationships between the species and their habitats, and our goal is to actually make this continuous from ridge to reef,

meaning that we don't only want to focus on the federal waters or the state waters, but we really want to integrate the information from the land habitat as well, as it all influences the marine ecosystem and the species that you're managing.

The basic outline was presented to you in April, and it hasn't changed at this point, but we will definitely take in all stakeholder contributions and comments in the further development.

As far as developing a strategy to facilitate partner and stakeholder engagement in the FEP development process, one of the tools that we're considering using is developing a ESRI story map to help share the information and the progress of the FEP development, and hopefully this will be a platform that the fishermen and the stakeholders and other researchers and scientists will be able to access to give us feedback and also to contribute towards the project.

It integrates maps, photos, and narratives to be able to present the project, and it also helps with networking with the scientific community and the stakeholders, to discover and integrate more information as it's available.

This is just a screen capture of the draft ESRI story map, just the front page. As you can see, it's pretty user-friendly, and it has the ability to put in a lot of different pictures and information.

This is also a good platform to be able to integrate other existing information. Right here, this is one of the base maps that has some of the bathymetry information, as well as some of the island-based information, but we can take and adapt this to anything we would want to present or any information that you would recommend.

As far as the data compilation and gap analysis, we're looking at the data inventory and data acquisition opportunities, and we are working to develop a data compilation and collaboration platform for the literature and the geospatial data, and this project began, and I was told that there wasn't much data in the Caribbean, but, as our team digs deeper, we find that there is actually an awful lot of data in the area, but it's just not all in the same format or in the same place or location.

Some of it is digital, and some of it is already on online databases, and other of the information is still on paper in somebody's office, and so we are trying to get this data

together and figure out what we need to do to coordinate it and get it all in one place so that the researchers and the stakeholders will be able to see it and use it. We're also having monthly calls to coordinate our efforts and update the team, and we're seeking out researchers to acquire data.

This is a screen capture of one of the projects that Graciela has been working on, and she can elaborate on it, if you like. It's the habitat maps, and these habitat maps actually for the USVI -- I think the earliest one was 1959, and they cover different parts of the bottom types, seagrasses and corals and other areas of interest.

This is another screenshot of these habitat maps, and these are on GIS online, and the link is already on the council website, and we'll be taking and integrating this information into the FEP. Here we have also Puerto Rico, and so, as you can see, we have a good amount of habitat data that ranges over the years.

In addition, there is the NOAA Deep-Sea Coral data, and we are going through the process to acquire this data so that we can integrate it and use it in our analyses as well. It has many locations around the islands over several years and classifications of corals.

As far as the data compilation and gap analysis, Orian has been working on collecting, processing, and analyzing several different fishery-independent data sources, including the NCCOS, the reef visual surveys, and the CRES datasets. These datasets go back to about 2000, and he is working to look at the changes in species richness and location and diversity, assessing the differences in the fish community structure and function, focusing on the benthic, spatial, and temporal differences.

He is also looking at some of the change analysis from the habitat maps over the years, and we are currently trying to get some Landsat satellite imagery to help fill in some of the gaps in those habitat maps. In addition, Graciela is working on the mesophotic reefs data integration project that she has going on, and so we'll have that information as well.

Some of our data challenges is that data-mining is necessary to compile the data. As I mentioned, there is a lot of data out there from academics and from other parts of the agency and from the local municipalities and authorities as well as independent data and data that is ancillary that would be from the fishermen and the stakeholders as well.

We really aim to take this data and get it all together so that we have a comprehensive characterization of the resource for the FEP, and the cooperation from other agencies is essential, and, if you happen to know of people that have data hiding on their computer or in their closet from previous research, if you can get them to help us out and coordinate with us to get that data integrated, that would be absolutely wonderful.

Organizing the data and building a geospatial database is also essential to the success of this project. We want to make sure that this database is dynamic and that it will serve you throughout the future as well and that it will be able to have updates as new data becomes available.

Some of the next steps is we are going to be working on the development of the online platform and the strategy to facilitate partner and stakeholder engagement in this FEP development process on the data analysis side as well as on the document side itself.

Data compilation and gap analysis, this is really important to find out what data we have and then if there are any crucial gaps in the data and then possibly look for funding sources to be able to acquire that data. We also would like to develop a refined outline and conceptual model.

If you have any further comments, Graciela and Bill are in the room there, and you can always contact me here at the office, and Orian is also, I believe, available if you have any questions for him. At this time, I can take any questions, and Graciela can go over the potential motion to continue work on the FEP.

CARLOS FARCHETTE: Thank you. Miguel.

MIGUEL ROLON: In view of the time and the importance of this -- By the way, just to mention that the gap analysis is just to figure out what you have and what you need and where you're going, and so, basically, that will be an exercise to make an inventory of what we have and the gaps of data that we have and others that we need to fulfill and then identify how can we move forward with that. The other one that I wanted is ESRI, and, Bill or Cynthia, can you tell us what that is?

BILL ARNOLD: Cindy knows better than I do, but it's ESRI, and it is the company that develops the geographic information system software that they are using, and it's really just a mapping and geographic referencing software programming system.

MIGUEL ROLON: GIS is the geographic information system, just for the alphabet soup, and the fishermen are asking me to try to get the alphabet soup out of the way when we discuss this, and so, Mr. Chairman, probably what we should do is, if the council agrees to have this motion, to get the ball rolling for the development of this ecosystem FMP as of this meeting, and so you have to have a motion.

TONY BLANCHARD: So moved.

CARLOS FARCHETTE: I need a second.

CARLOS VELAZQUEZ: Second.

CARLOS FARCHETTE: The motion is to instruct staff to develop a fishery ecosystem plan for the U.S. Caribbean. It's moved by Tony Blanchard and seconded by Carlos Velazquez. Any further discussion? **All in favor say aye; any nays; any abstentions. Hearing none, the motion carries.**

Thank you, Cindy. Next on the agenda is Alida Ortiz with the Outreach and Education Report.

OUTREACH AND EDUCATION REPORT

ALIDA ORTIZ: Good afternoon, or good evening. I will be very, very short. I am going to just explain to you or show to you the two main activities that we are doing for outreach and education at this moment on the council.

Right now, we are working with Graciela and trying to make the GIS information more historical in terms of what happened during some years in fishing that they have been putting in the GIS maps, and that to do with economic conditions and cultural conditions and, whatever happened during those decades, we are putting that in the GIS map.

The other thing is that we have been attending the DAP meetings so that we can get out what are the needs, in terms of outreach and education, that the fishers are asking for. From the last meeting, we found out that Puerto Rican fishers are very concerned about the lack of information or they are confusing information on ciguatera, and we have been doing some research to find out what is the new information on that.

Then, also, they are claiming that they need the technical information in a more understandable way, and so we will have to

develop all the fact sheets or the information that they can read and that they can understand that.

Probably the largest activity that we are trying to put together is the Responsible Seafood Consumption Campaign, and this campaign will be conducted in collaboration with TNC and other tourism companies, Sea Grant, and other agencies in the area.

The target is the general consumers and the restaurants. When we say general consumers, we are referring to the housewives and to the household person that goes to the fish market and they request some fish in particular, because probably that's our tradition.

It's not because they know them, but because that's what we cook and that's what we eat, but then we have many, many species that are abundant that are just as good that can be easily obtained, and we are leaving them out, and so, if we want to protect those species that are already in precarious condition, we have to find other species, and it doesn't have to be salmon, and it doesn't have to be tilapia. It doesn't have to be any of the other things that we find in the supermarket.

Then the restaurants -- The restaurants, because if restaurants use those species that are more available that can be cooked in a different way and they are just as delicious as the others, then we can take a little bit of pressure from those species.

We are putting the target on the consumer and on the consumer in the fish market, in the market, in the restaurants, and everywhere. For that, TNC has already prepared some of the materials that are going to be used, and we are evaluating them in terms of the species that they are going to promote, and then we are also taking care or doing some kind of assessment on these categories that are being put forward. Good Choice, those are the species that are more available, that are available probably all year around, and they are a great part of our fishing landings.

Then we have those are Go Slow, and Go Slow are those that probably we don't know very much about the biology or the ecology of the species, and we have to be very careful with those, and then the least recommended are those that are already under some kind of heavy management, and those are do not eat, and those are totally forbidden.

This information, the fishers know it, but the consumers don't know it, and so we want to make materials that the consumers can

have with them before they buy, and this is also a part of what we'll be doing with TNC, and, after that, we have some very novel activities for outreach and education.

Marcos has a boat in one of the marinas, and, the place where he has the boat, he will have information on the calendar of closures and on the responsible seafood consumption that we are promoting among the consumers and also about what species are forbidden at some times and others that are more valuable.

Besides that, we also are having the production with our technician, Helena Antoun, on very short videos to show that this is something that can be done that you don't have to go to a specialized university to do that, but how to work with those species that we need. This video is the last thing that Helena did with Marcos, and, Marcos, you make all the disclaimers that you want.

These types of materials, we want to use them in the fish markets, and we want to make them available to all the fishing communities so that we can see that we don't have to eat the whole fish, and we don't have to request that size, and we don't have to have it all fried or all in terms of the traditional way that we cook.

We did one with Carlos Velazquez in Naguabo as a person that administers the fish market, and he says what is there and where it was caught and how it was cooked, and then the person from the restaurant buys it and then gives the information to the client. These will be very short three-minute videos that will be distributed to the different places where we're going to have the product.

MIGUEL ROLON: It will be uploaded on our Facebook page.

ALIDA ORTIZ: Yes, the one is uploaded, and it's also on the Facebook page that Helena is administering. Yesterday, probably you were surprised to see so many cameras here, and I am interviewing some of the people on the council. The next activity that we are very heavily involved is the production of a documentary video that's being produced by a group here, and is the positive contributions of fishers in Puerto Rico.

We want to make an emphasis, and we want to make public that fishers are part of the management, that fishers are the ones that know the environment, that know the species, and they collaborate with the scientists, and they collaborate with the managers, and they do that on purpose. They do that knowing it

will be a very good result for the management in general.

Yesterday, they came and filmed the participation of fishers in the council meeting, but now they are going to go around the island and make public what the fishers are doing, so that we can put them in front and let them -- Let all the public know that the council is not a group of people here just doing regulations, but the fishers are part of that group, and the citizen scientists concept that we are using in the schools and universities is working with the fishers, because they know, probably sometimes better than we from the academy or from the research lab, the species in the field, and they provide that information, and they bring new species, and they tell you what is happening in the water, and so that will be ready for December, and we will see the product at the next meeting.

The Outreach and Education Advisory Panel also, of course, works with the USVI outreach and education, and so we have a short information here, and Mekisha is somewhere, but she can just tell us what we have here.

MEKISHA GEORGE: Good afternoon. I am Mekisha George from Fish and Wildlife U.S. Virgin Islands. I am the environmental aquatic educator for the USVI, and we do a lot of outreach to different schools and communities and organizations.

As we have up on the board so far, we've done five classroom presentations, conducted from April to present, and we got involved with a couple of summer camps. We conduct a lot of shore walks, where we take a lot of kids, and adults as well, to the shore. Normally, we pick areas where we have known nurseries, and the most common place would be John Brewers Bay Beach in St. Thomas.

It is covered with seagrass, and it's a very great area if you want to spot juvenile parrotfish or juvenile grunts. I also have a tape there, and it's an opportunity for the kids who have never even interacted with the ocean to get their feet wet for the first time.

We also collaborate with different organizations by doing youth fishing clinics. Of course, we want to encourage our children from young to have an interest in our marine resources and how to properly respect our marine resources, and, of course, to teach them the different skills of how to be good anglers, how to be responsible and respectful to the marine environment.

Not only do we focus on kids, but we also focus on adults as

well, because we do have a lot of adults in the Virgin Islands who have never even had a fishing line in their hand before, but they were always interested or curious to know what it is to fish in the U.S. Virgin Islands, and so we also instruct adults, as well as kids, on the proper means of fishing ethically and safely. Also, we have conducted field trips as well.

Here, if you see, we took this year and we created actually three posters that focus on mid-water game fish, recreational fishing, deepwater game fish fishing, and also shallow-water, and so, basically, we took some pre-existing brochures that we had in the past and we revamped it, and we made it poster-sized. That way, this information can and will be distributed to the different fish houses, the different bait shops, charter boat companies, and made available for anyone who wants this information.

The information basically lets you know what types of fish you can find in the different areas, what is the best gear type to use, what bait to use, what techniques to use, even up to the phases of the moon as well as whatever species may have closures on them at the time, and so it's basically a compact poster with all the information needed to fish within the USVI waters.

Here is one of our shore walks that I was talking about, and now this group is actually, as I recall, the sixth-grade class of one of our elementary schools. Right here, if you see very closely, this is the first time that we ever did. This we got a seine net that was actually made here in Puerto Rico, handmade, and it's about 110 feet in length, and we basically took it to John Brewers Bay in a well-known nursery and we corralled it. Mr. Gerald Greaux, who is sitting in the back, took his time, and he swam the net out, and we corralled the fish.

We brought them inshore, and, as you can see, all these kids of view-finder buckets. Now, the bottom of these buckets have Plexiglas on the bottom, and so, that way, all they have to do is get up to their waists in the water and put the bucket in, and basically we brought the marine life to them.

It was a huge success. Not only did we spot juvenile fish, but we also found some flounders as well, along with some pufferfish, and so, right here, you actually have Gerald. He's on the outside of the net, making sure that nothing is trapped within the net, and, this one, and you can't really see her very well, but that is Chelsea, and she was an intern with us at the time.

After we have all of this interaction with the children, as soon as we're done, we make sure that we lower that net, and we make sure there is nothing trapped within that net, and it was, like I said, a huge success, and we're so happy that we did it, and we're going to actually try to instill the same technique on our sister island of St. Croix.

On this side, this is a very happy junior angler. This is at one of our kids' tournaments that we assist with every year, and this was the first time that he had ever even had a hand-line in his hand, and he was so pleased and proud of himself that he caught a fish.

Now, every tournament or clinic that we conduct that involves live fishing, actual fishing, is also tag and release, because we always like to teach the children about size. Size is very important. If it's undersized, we don't want to keep it, and we make sure that we put it back, because we instill in them that, if you catch all the small and the young fish, then you have nothing to reproduce and build the population. Basically, this is what we have going on right now in the U.S. Virgin Islands. Are there questions?

CARLOS FARCHETTE: Bonnie.

BONNIE PONWITH: Thank you. You mentioned that you did five field trips, and would you be willing to share a little bit about what the subject of those field trips were?

MEKISHA GEORGE: Sure. Normally, when we do field trips, it could range anywhere from the shore walks that I have shown, and also we have a mangrove habitat walk, where we actually walk through the mangrove and we explain to the children the importance of having these mangroves in play. Not only do they help with erosion and with settlement control, but also with the prop roots providing habitat protection as a fisheries nursery. As we walk through, we identify the different types of mangroves and explain to the children each role that they play.

In St. Croix, they actually have access to a tidal pool, which is a totally different environment that we do not have here on St. Thomas, and so they would have a totally different type of field trip on their end. Not only do they have the tidal pools, but they actually also have a huge natural gut that has a whole other different type of freshwater specimens that can be seen, which we don't have here, and so it depends on what district you're in at the time, and so it can vary.

CARLOS FARCHETTE: Ruth.

RUTH GOMEZ: Fish and Wildlife has had an aquatic education program for ten or fifteen years, and it has been funded every year fully by the U.S. Fish and Wildlife Sportfish Restoration Funds. The Service has been extremely good to us, because, when that program first started, it was $20,000 or $30,000, which was big back then, and it has grown to almost a quarter-of-a-million-dollars between the two islands.

Through several years, we constantly changed the way we do business, and, between Mekisha and her counterpart in St. Croix, they -- Every year, new material is produced, and the grant that we just submitted to begin on October 1 of next year is a little over two-hundred-and-something-thousand-dollars, and it has -- Now, what they're going, because they have been doing it so long that they literally gave presentations to kids in kindergarten and watched them come out of the twelfth-grade.

There is not a better feeling than being like in the supermarket and a kid runs up to you and goes, Ms. Gomez, I remember you, and you came to -- I'm sure Mekisha gets it all the time, and so what they're going to do next year is they're going to take them out in the boat. They're going to take them out to the mangrove lagoon, and they're going to take them out and give them more hands-on experience.

They will still do seashore walks and school presentations, but focus more on getting them out, because you know have the second group or phase of kids that you have spoken to in kindergarten and elementary school, and so now it's time to take them out and show them and give them hands-on to what they've been hearing about.

In addition to that, one of the problems that we face is having a facility to do fishing clinics, and so, in that grant, we've put in for some funding to restore or do some modifications to the dock at Frenchtown Fish House, which is an excellent place to do a clinic. There's a lot of tarpon there, and the fishers are there, and we're going to put signage, and we're going to put removable rails, so it doesn't interfere with the commercial activity that takes place.

My hat is off to Mekisha more than anyone else. She has done a wonderful job with this program, and Chub, or Gerald, that gentleman right there -- I don't know, but I think we're going to clone him soon, but the division has twenty-something grants. When I first came in 2015, it was thirty-five grants, and I

think we're now down to twenty-five or twenty-seven.

This gentleman, when we were doing the time allotment for next year, for the next fiscal year, I was making notations of the time that people had in their grants, all the principal investigators, and I was seven grants in, and the maximum you can have is 2080 hours, and Chub was up to three-thousand-and-some, and I was only at Grant Number 7, and so that gentleman in the back came to me as a contractual worker nine years ago, and he is impeccable.

I mean, when it comes to getting stuff done and being there and getting up and taking people out in the field, I couldn't ask for a better person, and Mekisha has done a beautiful job with aquatic education, and so, to the both of them. (Applause)

You're going to see a lot more stuff coming from the USVI, and you have got to make a trip over there to see one of these seashore walks. They are amazing. These kids are running around like they're hopped up on sugar screaming, and I don't know how Mekisha does it, but hands-off to her. It pays to have a five-year-old son.

CARLOS FARCHETTE: Mekisha, on the poster, this is the regular-sized poster?

MEKISHA GEORGE: Yes, this is regular-sized poster.

CARLOS FARCHETTE: Okay. The brochure is --

MEKISHA GEORGE: It's actually a quad-fold.

CARLOS FARCHETTE: Okay, and it will be able to hold all of that information?

MEKISHA GEORGE: Yes, it can. We made sure, when we were doing the design, that we laid it out in a way that it can hold all the information. The brochure actually came before the poster. The poster was an after-thought, and I ran the idea by Director Gomez, and she said, if we could do it, go for it, and we did, and now we have three beautiful posters.

RUTH GOMEZ: I think the -- We just made a trip to St. Croix in our research boat with materials for St. Croix, and I think when we took a tally of the weight, we had 2,000 pounds in the boat going to St. Croix, and so St. Croix has their fair share of posters over there. Every time we order, we order an equal half for St. Croix, and so it's just a matter of reaching out to the

staff in St. Croix and they will get you what you need.

CARLOS FARCHETTE: Okay. Great. Thank you.

MEKISHA GEORGE: Yes, and that invitation is actually for anyone. Anyone who wants any copies of any of the outreach material that we have at Fish and Wildlife, just contact the Director or myself, and we would be more than happy to put a package together for you and mail it out to you.

CARLOS FARCHETTE: Okay, and packages for like the marinas and stuff? Okay. Great. Thanks. Back to Alida. Miguel.

MIGUEL ROLON: Ruth, would it be possible to have Mekisha at the O&E AP meetings, even as an observer, because you are the designee, and it will be good to have her contributions at these discussions, and the next one will be --

ALIDA ORTIZ: It's in November, and I talked to her already.

MIGUEL ROLON: Alida will make sure that she has all the information so that she can attend the meeting. Thank you, Alida.

ALIDA ORTIZ: Okay. Marcos, any disclaimers?

MARCOS HANKE: On the one that was talking about tuna, that's not a tuna, but it's just making a comparison with the color of the meat, just in case. Anyway, what I want to mention is that, the day before the meeting started, one of the owners of the marina just sent a letter to us saying that this effort and this donation and this effort to put that information about fishing regulations at the dock -- They have the interest to donate space at all the docks.

The next step is I make a design of a similar shape from the dock, but much bigger, which will be with a roof, and it's going to embrace the cleaning station, where the people go to clean their own fish, and, over there, we're going to have another area to put even more detailed information, and I was talking to Alida that one of the things that we want to do is more interactive.

Once we have a closed season, we're going to create a fishing activity for the kids' education, like a fishing safari, to get the point that they have to identify the fish, and like they have to go to the guides and to learn a little bit more about the fishes, to get the points. The winner is going to be able

to put, on that day, the start of the season and market, mutton snapper, closed season, and we're going to make a social event, and that's the plan, and I just wanted you guys to know.

ALIDA ORTIZ: Okay. Any other questions?

CARLOS FARCHETTE: Damaris.

DAMARIS DELGADO: I just wanted to congratulate you for all these great jobs, and I love these types of activities. I wanted to ask you something very specific. When you go to your field trips in the water -- At least in DNER, it's a little bit challenging to get especially youth, the children, into the water, because of the liability issues with our agency, and so I wanted to check how you manage to have the children in the water.

MEKISHA GEORGE: Normally, when we do our water field trips, as you see with the pictures with the shore walk, we always reassure the school, because normally it's schools most of the time, that the kids will not be in over their waist. We try to make sure it's waist high, no matter what the age group is or what grade we're doing.

The net, we are able to corral in the fish, so they could see more. Normally though, when we take them out, the school has the parent sign, of course, field trip slips. Because they're on a school activity, the school's insurance covers the children, but we let them know in advance that we will not be held liable for anything that may happen, and, when I do those trips as well, I make sure that I have at least three other staff members with myself, to make sure that we have enough people to cover the amount of children present.

DAMARIS DELGADO: Thank you.

CARLOS FARCHETTE: Ruth.

RUTH GOMEZ: If the activity is on a dock, what we do is Director Forbes sends an officer or two and a vessel, if it's available, and so the children are on the dock, and Fish and Wildlife has a vessel.

If Director Forbes has a vessel, he will also send one, and so there is always -- Should a kid fall over, there is always a boat there, and then there is my staff, the chaperones from the school, and then Director Forbes always send an officer, and so they are well covered.

CARLOS FARCHETTE: Thank you, Mekisha. Alida, are you finished?

ALIDA ORTIZ: Yes.

CARLOS FARCHETTE: Okay. Thank you, Alida. (Applause) Alida, with your idea about getting them to start eating different species of fish, work on marketing the black durgon. It's a nuisance out there. Okay. Next on the agenda is the Octopus Fishery Survey from Puerto Rico and Grisel Rodriguez.

OCTOPUS FISHERY SURVEY PUERTO RICO

GRISEL RODRIGUEZ: Good afternoon, everybody. My name is Grisel Rodriguez, and I represent DNER, and I'm part of the Sport and Recreational Fisheries Division. We decided to think about octopus, and so, although it's just 1 percent of the commercial fisheries -- Actually, it's 0.94 percent of the commercial fisheries, but it's still landed, and it's still important, and it still is a prey of other species, and so we should know about, right?

This is the graph up to 2014 that we got from the folks at the Commercial Fisheries Division, and, as you can see, it's about -- - Right now, it's about 20,000 pounds of octopus that is reported, and I asked Daniel about that peak in the 2000s that there was a peak in landings, but they don't know what happened there or why they have that.

Interesting enough, the south coast of Puerto Rico is the highest with the landings, and it is 76 percent, and then the west, north, and east, of course, due to the type of shore they have, and it's the least amount of reporting.

This is for the south coast, and it's the one that pretty much drives that fishery, and so our objective was to describe the octopus fishery from the fishermen, from the person that captures it, up to going to the restaurant or the kiosk that sells them.

It was a pilot project, and we did it from September to June of this year, and we covered the west coast of Puerto Rico. The methodology, we had two types of interviews, one for the fishers that we captured on the boat ramps and the shore and one that we called the point-of-sale. That could be the buyer, the fish markets, or the business, the restaurants or the kiosk.

For the fishermen or the capture, octopus capture, we had

questions about the age, the fishing mode, the duration, equipment, frequency, species identification, and disposition. For the point-of-sale, we asked about the business type, the octopus origin, if it was imported versus local, how much they paid for it, if they had a season, how it was prepared, and how much they sold per week.

Regarding the fishermen, we contacted thirty fishers that were looking for octopus, and five were dedicated octopus fishermen, and the age ranged from forty to seventy years, and the gear was hooks. The depth was between one and thirty feet, and the zones mainly were rocky shore and caves. This is the hooks that they use.

From those thirty fishers, of those five that were only -- They considered themselves octopus fishermen, three had fishing licenses and they were reporting, and we confirmed that with Daniel. One had an expired license, and two were not licensed, and they mainly sold to the businesses or particular clients and not to the fish market, and twenty-five were considered recreational, and they used the octopus for personal consumption or to use as bait.

These are the two octopus species that we found, the common octopus, octopus vulgaris, and this is the description of the species. It's three feet, and twenty-two pounds is the maximum weight, and the habitat is rocky shore, reefs, and seagrass beds. It is a species that is found mainly at depths between one and 650 feet, and it lays eggs, 100,000 to 500,000 eggs.

We measured 120 octopus, of which 118 were from octopus vulgaris. Over there, you can see a graph with the average maximum and minimum weight, and we took measurements of the mantle, the head, and the total length. Octopus that were less than 200 millimeters -- Because this was voluntary, most of the fishermen didn't allow the interviewer to measure it, and they said that they would use it as bait. This is the size frequency distribution. Mainly in the 300 millimeters is the average length that it was caught.

The other one was octopus briareus. It has several names around the coast. This is a smaller octopus. It's about three feet, and three pounds is the maximum weight. The habitat is mainly reef, but also on rocky shores, but it has nocturnal habitat, and maybe that's why we didn't see them that much. The depth is between one to seventy-five feet, and it lays a less amount of eggs. It's between 150 and 950 eggs. We only measured two individuals, and you can see, over there, the length and weight

of those animals.

Some fishers identify the common octopus as the male and the other as the female, and so what they do is they capture the common octopus thinking that they are leaving the females. The octopus around Puerto Rico has several names, as a lot of fish species, and so, over there, we put in the names in Spanish that they have in the different areas that we covered.

We decided to show a little bit of the species identification, so we can see the difference, the coloration. Octopus vulgaris, or common octopus, they are brown and cream, and the other octopus does have a lot of blue on the tentacles, and, also, when you see the suckers, the vulgaris have a ring that could be used for species identification that the common octopus doesn't have. Lastly, the eye coloration, the other octopus has a dark ring around the eye that the common octopus do not have.

We asked them if there is a season. For the north coast, they point out that they capture more between June and October and that it has a peak in August. The weather condition is the main factor for them to capture the species. In the south coast, it's October to January and closer to the shallow areas, and they say that is because it increases, the temperature, and so they come up more, and due to mating.

Regarding the point-of-sale, we visited nineteen fish markets, of which eleven, or 58 percent of the fish markets, sold octopus. One of the fish markets mentioned that they only buy imported octopus. The price is about five-dollars per pound, and the average sold is about seventy pounds per week, and they say it is seasonal.

The kiosks, we visited ten in the area, and one buys directly from the fishermen, one from the fish market, and the rest all buy it either from the supermarket imported or big-chain commerce, and the average they sold is about twenty pounds, and they are prepared boiled, in sushi, and in turnovers.

For the restaurants, we visited sixty restaurants, and fifty sold octopus on their menu, and 88 percent of those buy it imported, and they were from Spain, Vietnam, Philippines, and Mexico. 9 percent only buy from local octopus fishermen, and 63 percent say that they never buy from fishermen, and they were from importers. Food supply companies were the highest, and then fish markets and local fishermen, and the average sold per week is thirty-five pounds, but the maximum for only one restaurant was 200 pounds per week. They pretty much are

prepared the same. They are boiled for sauces and salads and sushi and turnovers.

This was just a pilot study to see what's up with this species, and we think that there is a need for species identification first. It will be nice to have a standardized measuring protocol to see if it is more reliable to do total length, to do the mantle length, or to do weight. The size of sexual maturity, and we need to know if it is feasible and if it is important to protect those seasons with closures, and we need to cover the rest of the island, cover the east and the northeast coast of Puerto Rico. If you have any questions, I am happy to help.

CARLOS FARCHETTE: Ruth.

RUTH GOMEZ: I have two questions. What is the price of imported octopus versus local-caught?

GRISEL RODRIGUEZ: The imported, and I forgot to put that in, but it was between four and seven-dollars.

RUTH GOMEZ: Imported is how much?

GRISEL RODRIGUEZ: That is imported.

RUTH GOMEZ: What is local?

GRISEL RODRIGUEZ: It is five at the fish market, and the fishermen sell it for four-dollars to the market.

RUTH GOMEZ: So there is not much difference between imported and local-caught, and so did the restaurants say why they would prefer to buy from Vietnam and Spain and all those other countries versus local-caught octopus?

GRISEL RODRIGUEZ: The demand and they could buy it easily, and, at least on the west coast, where we did these, there were just thirty fishers that we found, and only five were just focusing on octopus.

RUTH GOMEZ: Then my last question is do you know, by chance, what was the reported landings of octopus for the last complete year that you have?

GRISEL RODRIGUEZ: For this year? For this year, I don't know.

RUTH GOMEZ: Last year?

GRISEL RODRIGUEZ: The only information that I got from the commercial division was up to 2014 that they had it. I have that here. Here, in 2014, they estimate that it was about 28,000 pounds.

MIGUEL ROLON: The other thing of why the restaurants keep telling us all the time, the last thirty years, is that they cannot have a constant supply from fishers, and that's why they buy imported mostly, aside from the price. The other thing that we found, and I don't know, Grisel, if you found that too, but, in the metropolitan areas, octopus, queen conch, and the others have a higher price, because of the demand and the capacity of the people to pay for that.

GRISEL RODRIGUEZ: We didn't cover the metropolitan area, and we need to do the other half of Puerto Rico, definitely.

CARLOS FARCHETTE: Carlos.

CARLOS VELAZQUEZ: (Mr. Velazquez's comment was in Spanish and was not transcribed.)

CARLOS FARCHETTE: I kind of agree with that. You seemed like you were shocked that they were using it for bait, but it is excellent bait for catching grouper, excellent bait. You can catch seven fish with one piece of bait, and it's so hard, and it says on so long with the little tentacles.

GRACIELA GARCIA-MOLINER: In fact, it's one of the favorite foods for groupers.

CARLOS FARCHETTE: Yes, and so any more questions for Grisel? Hearing none, thank you so much. Okay. Continuing on, unless somebody really needs a break here, should we just finish off? Are we good? We're good. Enforcement Issues, Puerto Rico DNER.

ENFORCEMENT ISSUES
PUERTO RICO DNER

DAMARIS DELGADO: We asked the Rangers Corps to give us some statistics on the violations being addressed from April to July of this year, and so it will be a continuation of what Ricardo reported in our last meeting in St. Croix.

(The presentation was in Spanish and was not transcribed.)

DAMARIS DELGADO: I just wanted to also mention that we have

organized like special projects of enforcement at different areas, and the ten interventions that she mentioned in Culebra was a result of that. It's getting Rangers from different areas of Puerto Rico and bringing them up to one spot to intervene with the people, and so that has helped a lot with the efficiency of the interventions, and we foresee to keep doing that more often, and that is the vision that the Secretary has, to have like specialized task forces within the Rangers. For the Secretary, the fisheries are very important, and so we're trying to target specific places where we are identifying problems with the compliance.

CARLOS FARCHETTE: I know how difficult that can be. Next is DPNR.

USVI DPNR

HOWARD FORBES: The Department of Planning and Natural Resources Division of Environmental Enforcement conducted dockside inspections to capture any HMS fisheries that are harvested by both recreational and commercial fishers.

At the same time, a patrol was conducted during the mutton snapper aggregation seasonal closure on St. Croix from March 1 to June 30. On St. Thomas, similar patrols were conducted at the Grammanik Bank.

On July 25 and 26, a performance review site visit was conducted by Michael Frye and Patrick Lasseigne, special agents from NOAA Fisheries. This review highlighted some internal control policies regarding how officers conducted JEA patrols. Emphasis was placed on the handling of investigation and case processing procedures.

On their last site visit, concerns were raised due to the lack of completion of implementation of the standard operating procedure manual for the division. However, I was delighted to showcase an approved signed copy from Commissioner Henry, which met with their approval. We also discussed new priority executions from the 2017 cooperative enforcement program.

Priorities have been changed for the U.S. Virgin Islands program, and I am going to go down the list as to what was changed. USVI Priority Execution 1 was Magnuson-Stevens Act, and the sub-category is the reef fish and annual closure prohibiting harvesting species.

Priority Execution 2 is the Endangered Species Act, sub-category

of sea turtles and coral. The Priority Execution 3 is the Lacey Act and the internal IUU task force, which is illegal, unreported, and unregulated fishing. The sub-category is importation and exportation of seafood.

Priority 1 is the Magnuson-Stevens Act, and the sub-category is highly migratory species, HMS. Priority 2 is Marine Mammal Protection Act with the sub-category of marine mammal protection.

On the second day of the review, the focus was on marine patrol operations, and officers were observed conducting boarding procedures on commercial fishing vessels. We are awaiting the assessment report from this site visit.

Highlights from enforcement actions, six fishing citations were issued and forty-two written warnings. There were 111 commercial contacts and thirty-nine recreational contacts. There were 187 marine patrol hours and 304.5 dockside inspection hours. We had also fifty-two hours of outreach enforcement, and we also had a number of 207 fishing licenses processed for this season. This concludes my report.

CARLOS FARCHETTE: Any questions for DPNR? Hearing none, I have the U.S. Coast Guard.

U.S. COAST GUARD

JEREMY MONTES: Good afternoon. I am here on behalf of the new 7th Coast Guard District Commander, Rear Admiral Peter Brown. For anybody who has ever heard that name before, I think this is his third or fourth time being stationed at the district headquarters, previously as the Chief of Enforcement and the Chief of Response, and so his joke there is he has done all of our jobs, and so we can't really pull the wool over his eyes, but he is honored to be back in the Caribbean, back working with everybody again, and he is very excited and looking forward to a very productive two years as the District 7 Commander.

I will start off with very recently we went through the assignment of our low and high-priority fisheries for the next fiscal year. For the Caribbean, highly migratory species, which we define as the Atlantic billfish, tuna, swordfish, and sharks, were assigned a high-priority fishery, and that's actually managed at a level higher than us, but it still is a priority for the 7th District.

Then the only other fishery right now that's assigned a high

priority is the commercial spiny lobster fishery, and the only difference between high and low priority for the fishery is where we focus on our boardings on, and so high-priority, high-precedence, fisheries, we try and focus more of our boardings on that type of fishery, to ensure that there is compliance.

The only thing of note, especially after Wes's presentation yesterday is, since I'm also on the South Atlantic Council, we do have the dolphin wahoo assigned as a high-precedence fishery for the South Atlantic Fishery Management Council, and so I just wanted to make that small note.

On the note of boardings, we are approaching the end of the fiscal year, and we will, more than likely, maintain or come close to meeting the requirement set forth in our operational planning doctrine, which is 100 boardings conducted in federal waters for the fiscal year. I am happy to report right now that our compliance with fisheries is -- The observed compliance is at 100 percent. We have issued zero fisheries violations in and around Puerto Rico and the Virgin Islands this fiscal year, which is excellent.

Where I do note that we have issues is, again to reiterate what I stated at the last meeting, is with safety. We have numerous safety violations, and I am hearing anecdotes of fishers not knowing the safety requirements for fishing further offshore, or even fishing close inshore, of what they need to have for basic safety gear for safety of life, and I have taken that for action myself.

I have nothing to show for it right now, because we just discussed it in the last twenty-four to forty-eight hours, but I am going to start working with our commercial fishing vessel safety examination folks and developing some outreach and some education type of products and maybe something to put right next to the fish identification or kind of some more of those types of documents, and, right next to that, include, if you're going this far, this is what you need for safety gear. If you're going this far, this is what you need for safety gear, just to have that readily available in the marinas, in the stores. That way, we can make contact with these people and ensure the highest level of compliance with what I think is a more critical part of what we enforce, which is the safety piece and keeping people alive out there.

One additional note that was just brought to my attention from our head of fisheries policy at Headquarters is that we've been working with various international organizations, including

CARICOM, and they have been attending the regional working group on illegal, unreported, and unregulated fishing, which was just brought up, and there has been recommendations for the Coast Guard, under our newly-discovered Circular 175, or newly-awarded Circular 175, authority under the State Department to renegotiate bilateral agreements with our Caribbean partner nations to develop better cooperation, not only for some of the more -- Just to broaden the definition of illicit trafficking or illicit activity to include violations of sovereign nations, marine protected species, and also their managed fisheries.

Under that would be things like joint patrolling or just us providing, the U.S. Coast Guard providing, capacity-building-type training to foreign nations to help them out in enforcing their own waters.

Obviously, we don't have any of those bilateral agreements in place right now, but that's something that will be coming down in the near future, and I'm also going to bring back some of the discussions from the council meeting this week and brief that, if we're opening them up for discussions of joint patrolling and capacity building with regards to enforcement, is there a way that we can also open up the door and talk about management of highly migratory species, management of dolphin wahoo, things that don't just reside within the U.S. EEZ and is kind of an international discussion rather than just our discussion.

I don't know what kind of response I'm going to get from Headquarters, but it's something that I feel confident that I can put on the record right now as saying that we're going to have that conversation and use the discussion of working together to help out the enforcement on both sides to also open the doors for discussion of management of our international fisheries.

Then the last -- I always like to leave on a high note, but, last month I think it was, we had a Good Samaritan Report in St. Thomas of an injured sea turtle, and so one of our -- Besides living marine resources enforcement, it's also marine protected resources, both enforcement and assistance, and our marine safety attachment, our boat forces attachment in St. Thomas, responded to this. We used our boat ramp, and we were able to safely get the animal out of the water and into the hands of the Sea Turtle Rescue out in St. Thomas.

The only sad part about that was not the great coordination between the Good Samaritan that reported it and the Coast Guard who helped respond to it and then the Sea Turtle Rescue that

helped to try and rehabilitate the animal, but that the animal eventually died, but it definitely kind of highlighted the flexibility of the Coast Guard and the great reporting of our citizens out there, who care as much, if not more, about the resources that are available out there. It was a very proud moment for us.

We would have liked the animal to live, obviously, but we can't always win, but I still count that as a positive note, and, with that, I end my report, and I am standing by for any questions. Thank you.

CARLOS FARCHETTE: Thank you. Marcos and then Miguel.

MARCOS HANKE: Thank you for your report. There was a discussion at the HMS meeting about the requirements for a commercial fishing vessel and addressing the fact that the commercial fishing vessels in the Caribbean are very small and that list of requirements that was discussed in the meeting didn't make sense to us.

The response at that time was that was going to be revised to address that, and is there any news or any instructions for the commercial fishermen on those requirements? That is question number one.

Then a request now. Once those lists of requirements are clear and if they are going to be customizable to the Caribbean, for our fleet, for whatever standards or boat sizes or whatever, I would like to include, in the information that we put on the dock for the people, a little safety list for recreational vessels and commercial vessels at the dock, and this is something that we really want to include at the marina as information. Thank you.

JEREMY MONTES: Thank you for the question. I have to plead ignorance on this one. I wasn't involved in the recent HMS talks, and so I'm going to have to get back to you on, but I will take that down, and I will look it up, and I will contact my -- Unfortunately, because HMS is our next level up, they don't sometimes include us in those meetings, and so I will reach out to the person who attended that meeting and see if there's any traction for creating kind of different regulations for the Caribbean, being that it's different types of vessels that are being used.

UNIDENTIFIED: I was just wondering what type of gear type are you talking about?

MARCOS HANKE: The issue was raised in Puerto Rico, one that came the first time out, because of the rafts that it was necessary to carry on the boat, which is extremely costly, the maintaining of the raft, and the space on the boat. If you have a twenty or twenty-five-foot boat, it was not practical to have that, and --

UNIDENTIFIED: So it's observer safety?

MARCOS HANKE: I believe, and I don't know if it was because of the observer or if it's just a gear that is required after such a distance, just because it's a commercial vessel, and this is my understanding, and not necessarily an observer. All this discussion, the details, I don't have it right now, but we were waiting for a formal instruction from the Coast Guard to the council, or to any representative, to spread out the word, and this is what we are looking for, for the fishermen not to get in trouble trying to comply and not knowing anything.

UNIDENTIFIED: Okay, and so it could be safety gear, just Coast Guard, and not fisheries requirements? If it's associated with an observer or turtle mitigation gear, then that would be a --

MARCOS HANKE: I think it's not a fishery gear requirement, but it's a safety gear.

ROY CRABTREE: If it's a life raft, it's a safety issue.

CARLOS FARCHETTE: Right. It is a life raft. It's an inflatable device that the person can actually come completely out of the water, and they're making them small enough now that they're pretty compact, but they're just expensive, because you know how some things, the smaller it is, the more expensive it gets.

MARCOS HANKE: It has to have an inspection every so often, and there is no personnel to do the inspection locally, and it's very costly to send it for inspection, and there is people that dedicate themselves to renting you one, and they are so nice that they are renting you something until yours is inspected, and it just creates a big socioeconomic adverse impact to the fishing fleet here, and there is other things that can be done on the warm water and on smaller boats to still be safe and not to have those requirements.

CARLOS FARCHETTE: You can still get hypothermia in the tropics though, and so -- Okay. Velazquez.

CARLOS VELAZQUEZ: (Mr. Velazquez's comment was in Spanish and was not transcribed.)

JEREMY MONTES: I understand completely the requirements that were recently kind of enacted for the commercial fishing vessels only, as far as safety requirements, and I know that there was a grace period, and I also know that the grace period is now over, and so the requirements are in place and that requirement for the -- I think it's the initial safety exam decal, and then I believe it's every five years requirement after that. That is in place, and I know that it's not just a Puerto Rico or U.S. Virgin Island problem.

It's across the Coast Guard, and it's across the United States of folks not -- The Coast Guard not having sometimes the capacity to get out and do the dockside examinations, but also the folks not having the required equipment to pass the dockside examinations, but, still that's part of their livelihood, and so they still go out and fish regardless of that.

There is a penalty incurred if you're caught out there without that. You will be issued a violation for that, but, as of right now, because we're past the grace period, I think our only path forward at this point is to develop the education and outreach and make it explicitly clear, because it's based off of the size of the vessel you're on, and it's also based off of how far offshore you are going.

To say, if you're on an eighteen-foot boat that's only going twelve miles offshore, this is all you need, but, if you're going across that twelve-mile line and all of a sudden you're farther out, or, magically, your vessel grows five feet longer, if you've got a lot of weed growth or something like that, and that's a little bit of a stretch, but, if you start going out further, these are the requirements that you're going to meet in order to still comply with the rules.

I want to make that explicitly clear through the education and outreach documents that I'm going to be working on with our commercial fishing vessel examiners, to make it easy for people to understand, because it's not. It's not even easy for my boarding officers to understand.

We have an entire book that is on top of the other book that they carry with them, so, when they go onboard a boat, so they can figure out what they're supposed to enforce, and they don't always get that right, and so it's almost unfair for us to say

that you guys should be able to figure it out by reading the Code of Federal Regulations or the other laws that have been written on it when we have a hard time doing it ourselves, and so developing those documents is going to be our key to success for both making sure that people are informed of the requirements and also for helping my folks out with making sure that their enforcing the requirements.

CARLOS FARCHETTE: Okay. Julian.

JULIAN MAGRAS: I just wanted to say thank you for your St. Thomas/St. John based group. They have been very, very exceptional, due to the fact that they've been invited to three meetings over the past six or less months, two of them by Fish and Wildlife, which one of them was the fishermen's registration that just took place in July, and they were there at the pre-registration meeting at the Windward Passage, and they were also at the MREP meeting.

They did some presentations to the fishers, and it gave the fishers a great opportunity to interact with the team, and they were so clear and so specific of what the different vessels and sizes and the difference between the three miles to the nine miles to the twelve miles to 200 miles and what the requirements are and then also with the decals and the mandatory inspections that need to be done now that is in place.

A lot of the fishers now are taking advantage of that, and they are working directly with your team and scheduling the inspections, and everyone is working hand-in-hand, and they would come out and they would tell the fisherman that, well, you passed, and give them the sticker, or they would say this is what you need, and you have I think it's thirty days that you have until. If not, then we're got to redo the whole inspection back over, and so that has been working very well in the St. Thomas/St. John district, and I want to say thank you to you and your team for that.

JEREMEY MONTES: Thank you for that feedback. I will definitely pass that along.

CARLOS FARCHETTE: Okay. I have a question, because I know that I went to the MREP meeting when all the Coast Guard guys were there, and they were saying that they're going to try and familiarize the St. Croix Coast Guard too, because I think they have to be specifically certified to do this kind of stuff, and correct me if I'm wrong on this, but we had a fisherman that was boarded not too long ago by the Coast Guard.

Artisanal fishing vessels I thought were exempted from EPIRBs, but then he was told, or he was given a citation -- Well, he was given a citation for not having certain equipment and escorted in, but they said that he needed an EPIRB, and I thought there was some exemption given to artisanal vessels for EPIRBs, and do you have anything on that?

JEREMY MONTES: I don't have a good, solid background on any of the exemptions right now. I can make a note of that, and, again, I am going to go back to my -- We kind of divide the commercial fishing vessel safety stuff and the fisheries law enforcement into two different offices, and so I'm more of the fisheries side of it, but we've got so much of a focus on the safety side here, but I will consult with him and get back to you on that. If the violation was issued erroneously, when it gets up to our violation coordination center, they will realize that there was an error made, and they will just kind of -- They will pull the violation off the record.

CARLOS FARCHETTE: Okay. I don't know if he was cited, but I know he was escorted in for missing other stuff, too. Okay. Now I have NOAA/National Marine Fisheries Service.

NMFS/NOAA

JEFF RADONSKI: Thank you. First off, I would like to start off with some positive news. Enforcement Officer Pena Lopez is now starting his field training officer program. It's a twelve-week program that our officers are going through, and it's really extensive training, where they are working every week with experienced agents or officers, and they have tests every week, learning fisheries, policies within NOAA, techniques, and so it's real intense, but he just started, and so, once he completes that twelve-week program, then he will be out and about, and he will be here in San Juan, and so we're looking forward to that.

One of his primary duties will be working with JEA partners in the Caribbean, and he brings a lot of wealth of experience, and he is coming from the Florida Fish and Wildlife, and, actually, he worked in the sanctuary in Key West, and he was onboard the big patrol boat, a NOAA patrol boat, and he did a lot of federal fisheries enforcement, sanctuary enforcement, and he has a great wealth of knowledge and expertise in fisheries already, and so we're very happy to have him along.

About the only other thing that I really have is we did follow

up on complaints when the longline fleet was down here in Puerto Rico, and we were receiving complaints that the boats were fishing within the territorial waters. We looked into it, through our VMS, and even some interviews, and we could not establish that that occurred, but, in reality, inside of nine miles around Puerto Rico, it's not a federal violation.

If a state has a violation on it and we could have established it, we would have assisted the state in doing the case, but, in the cases we saw, we had no violations, and we also did quite a few dockside boardings of the longline vessels when they were coming into the San Juan area, but we found no real violations, and so that's it.

CARLOS FARCHETTE: Thank you. Are there questions for NMFS? Hearing none, I have Meetings Attended by Council Members. Other than the CCC, we --

MIGUEL ROLON: We can move on.

CARLOS FARCHETTE: Okay. We have Other Business with Carlos Velazquez on the conch closure revision for Puerto Rico.

OTHER BUSINESS

CARLOS VELAZQUEZ: Management fisheries in a changing environment in 2017 -- The Fisheries Leadership and Sustainability Forum is a policy organization that supports Puerto Rico and the Virgin Islands and the council process. The forum helps create opportunities for problem solving and discussions in support of the council's process and provides an interface among councils and their management partners, including NOAA Fisheries.

Management of fisheries in a changing environment participants included fishers, council members, and NOAA scientists. The 2017 forum objective was to explore the changes that fisheries face in a changed environment and the steps local administration and management can take to respond to these changes for the long term.

Lessons learned, it was interesting to participate in this workshop, because I wanted to learn more about what other management agencies and councils were doing in regards to management and climate change and challenges in fisheries.

It was an opportunity to exchange ideas and information regarding the regional changes in fisheries due to changing

environments and to explore potential management measures to help mitigate adverse impacts to these changes.

I learned a lot in terms of the science and biology used to bring a balance regarding fishery management and how we can prepare for the change brought by climate change, which continues to be devastating for the marine ecosystem under which we know little of -- If something left an impression on me, it was the topic of climate change.

This experience was many things learned that can continue to be applied to my daily life as a fisherman. Difficult times are ahead, and we need to take this into consideration. As a council member and the president of a village fishermen's association, I would like to work with the council to present here to begin studying the impacts that climate change is having on our fisheries and take this information to the local fishing communities so that we can all prepare for the management and the changes ahead.

This is the group of the Fisheries Forum, and this is the council members, and these are the directors of the South Atlantic and the Mid-Atlantic, and it was a very good experience for me. The fishers of Alaska and the big boats that fish for salmon and the crabs, and it was very, very interesting for me, and it is very good for me. Are there questions?

CARLOS FARCHETTE: Bonnie.

BONNIE PONWITH: Thanks to you for your interest and leadership in taking into consideration climate change in this very precious resource we have, the fisheries resource of the U.S. Caribbean. NOAA Fisheries, two years ago, completed the NOAA Climate Science Strategy, and one of the actions, one of the very first actions, that was called out in that strategy was the creation of regional actions plans.

We have been stepping our way through our southeastern United States region, the ecosystems within there, and developing regional action plans. The first plan was published in November, and it was the Gulf of Mexico regional action plan, and the South Atlantic regional action plan is completed and being prepared as a technical document even as we speak, and I expect that to be released very soon.

The third step will be to begin on the Caribbean regional action plan. An exciting development is that, while that is in development, the next step that we're taking is the development

of climate vulnerability analyses, and, essentially, we have a team of scientists who are looking at the primary species in the Gulf of Mexico, the South Atlantic, and the U.S. Caribbean, and, in each of those regions, what are the main species that are harvested in the commercial and the recreational fisheries?

We are identifying those, and we're looking at the published literature and data we have available to understand how vulnerable are those species to different aspects of how climate change manifests itself in each of those unique regions. It might be sea level rise influences the amount of juvenile nursery, or it might be ocean acidification, or it might be -- There is a list of ways that climate change influences the environment.

Ocean temperature is obviously the most obvious, but even current patterns can change because of increased temperature, and so we're in the process of developing those climate vulnerability analyses. We'll take the first cut at that, and then we'll float that first cut by regional scientists and ask them to take a look at it and then ultimately bring in a team of regional experts, the scientists, and have them do quantitative or qualitative evaluations of the vulnerability of these individual species to climate change, and we'll use that to provide the council with some information, so that -- We talked about, in the fishery ecosystem plan, how crucial that first step is of setting priorities, because there is never enough time and never enough money.

What this does is it enables the council to have some information at their fingertips to help set priorities with respect to climate change in these vulnerable systems, and so, again, I congratulate you for your interest and your concern on this important topic.

CARLOS FARCHETTE: Miguel.

MIGUEL ROLON: Almost everything was said, but one thing about climate change is there's a lot of information coming out nowadays, and Diana one day called me and said that there is a nice TV program about the south Pacific, and it's a six-episode program, and I encourage you to look at it on Google and see if Netflix has it, and you can see how climate change and overfishing and others are affecting the tuna fishery in the Pacific.

Also, there is another one called *Chasing Corals*, and that is happening to the corals because of climate change is going to

happen here, and it's already happening, by the way, and it's amazing, because we will probably lose all the corals that we have in less than fifty years, according to this program.

In that program, a couple of people were able to, using cameras to document, and you can see it, through time, how the corals are affected by climate change, temperature and so forth, and you can see the coral from being a beautiful coral area, almost pristine, and turning into a devastated area, where you don't see any fish and you don't see anything.

In our Caribbean area, and I'm talking about the whole Caribbean and not the U.S. Caribbean, but many of the species that we fish for, recreational and commercial, they all depend directly or indirectly on coral reefs, and so I encourage everybody to take a look at that, and I am glad that you brought up the issue of climate change, because a certain President doesn't believe in climate change.

There is very little that you can do except pray for the best, but the other thing is that you may be able to help alleviate the problems somehow, and you have heard that Puerto Rico is doing their best, and I know the Virgin Islands is also working on climate-change-related activities, and so thank you for bringing that up at this meeting.

CARLOS FARCHETTE: Okay. Cartucho.

CARLOS VELAZQUES: Thank you, Mr. Chairman. (Mr. Velazquez's comments were in Spanish and were not transcribed.)

CARLOS FARCHETTE: Thank you, Carlos. Graciela.

GRACIELA GARCIA-MOLINER: The council submitted the three-year proposal to the Coral Reef Conservation Program, and, for FY18, the specific proposal includes reviewing or revisiting the mesophotic areas that have been sampled to date, especially looking to see if we can conduct a fishery-independent survey, in order to have a second survey of conch at depth, but we're talking about thirty to fifty meters.

Beyond thirty meters, it's more technical, specialized diving, and divers do need mixed gases, et cetera, but part of the issue that had been discussed at the council had to do with safety, and so, yes, there has been one survey conducted at depth in the federal waters, and the second one, if we get the money, will happen in 2018.

CARLOS FARCHETTE: Maybe we need to send an ROV down there. Richard.

RICHARD APPELDOORN: Just a quick follow-up to that. I am helping some researchers from the University of Maryland eastern shore who are testing a video sled for collection of benthic data, and, as one of their tests, they are using it to compare the SEAMAP data format to their sled, and that work was done last fall.

The upcoming season, they are going to be trying to target a comparison of inside and outside the federal area, protected versus not protected, and I have been trying to get them interested in towing that in the deep areas off of Tourmaline, where we've seen a fair number of conch in ROV surveys, and so maybe we'll have some additional information there.

CARLOS FARCHETTE: Thank you, Richard. That's good news.

CARLOS VELAZQUEZ: Richard, thank you about that. Thank you.

CARLOS FARCHETTE: Do we need to revisit what happened yesterday afternoon when we were supposed to leave things for open session or whatever? Do we have to go through that at all?

MIGUEL ROLON: In Other Business, we received a letter from the Commissioner of the Virgin Islands to see if we can carry over the first three quarters of the liaison funds, and so Jocelyn is going to get the information for us, and we will convey that to Ruth. We don't see much of a problem, but it's just that we want to make sure that we do the right thing legally.

Our personal preference is to allow the Virgin Islands to receive the authorization to carry over funds from one quarter to another until the third quarter. Then, the last quarter, it's not carried over and it's just finished.

Also, I think thanks to Ruth and to Damaris, and we just received a little bit more money a couple of weeks ago, and you will have $5,000 each more, and that was an idea that was put forward by Carlos, and he's the Chairman again, and so authorized me to send you that, and so that money will be useful to finish the year. In addition, Damaris can use it to bring maybe Ricardo or whomever you desire to the next council meeting in St. Thomas.

DAMARIS DELGADO: Thank you. We would like to have someone else at the next council meeting, if possible, and she lives in the

States, and I don't know if that could work as well.

MIGUEL ROLON: The liaison funds, you're the one who authorizes the use of it, and so you can bring anybody from anywhere that you think will help the Department of Natural Resources with the fishery-related issues that we discuss with the council.

DAMARIS DELGADO: Thank you.

MIGUEL ROLON: The last thing that we discussed is probably what we should do is to allow the Chair, with a small little committee, maybe Ruth and Damaris, and we would like to revisit the issue of the attendance by members of the DAPs to the DAP meeting, and their worry here is that the three Chairs would like to see a more dynamic group.

One of the issues that they discussed is to revisit this mechanism by which if a member cannot attend a meeting, as an example, twice in a row, excuse or no excuse, that person may be out, but that will be something that probably, if Ruth and Damaris can work with the Chair, we can address that and come to the next council meeting with a final recommendation to the council, if you accept.

RUTH GOMEZ: Are we going to address the issue of travel days for the DAP members?

MIGUEL ROLON: Yes, and all that should be addressed by this sub-committee, and then we can have the presentation, because --

CARLOS FARCHETTE: Okay. Any other business? Julian.

JULIAN MAGRAS: Good afternoon once again. I would like to just make a little announcement on behalf of Nelson Crespo, the DAP Chair of Puerto Rico, Edward Schuster of St. Croix, DAP Chair, and myself, Julian Magras, DAP Chair of St. Thomas/St. John.

At the December meeting, on December 12th, the first day of the meeting, on that evening, the three Chairs are getting together, and we had discussions, and we're going to have more discussions, and we are planning a dinner for all the attendees that are coming to the council meeting, and we would like to host everyone who attends at that meeting, and we're going to do a fish fry, and we're going to have some conch and some lobster salads, and we're going to have some presentations and music and drinks, and it's going to be sponsored from the three Chairs that represents the three different fisheries.

We have been in some discussions about it, preliminary discussions, but we're going to pull it off, and we are all 100 percent in favor of it, and so I'm putting out that announcement to you guys. I know, last year, we were supposed to do something, but, due to some unforeseen circumstances in my life, that didn't happen, but we are planning on it, and it's going to be a nice little event for that first evening, and everyone that attends will be invited to participate in that event.

PUBLIC COMMENT

CARLOS FARCHETTE: Thank you, guys. That was very nice of you. As long as Nelson Crespo brings me a nice bring queen snapper from Rincon. Any public comment? Nobody. Damaris.

DAMARIS DELGADO: I just want to remind you all that the week of the coral reefs that we'll be celebrating the last week of August, and it's an initiative that was suggested by Alida Ortiz in one of our efforts to protect coral reefs through our funding through NOAA, and we are very glad to do that. This will be our third year of celebration, and what we try is to have different entities, NGOs and academia and everyone, to try to convey the message of conservation of coral reefs through the whole island.

If you have any ideas, and I suggested that in our DAP meeting, and I invite the fishers to get integrated into the effort, and so you are all welcome to do any activity, any outreach and education activity, that week, and, if you let us know, then we can present the activity and market the activity and post it on our webpage. If any of you is interested, please let me know, so we can coordinate the activity. Thank you.

CARLOS FARCHETTE: Okay. Anything else?

MARCOS HANKE: In case you guys want to know, we have on the list people identifying the fish yesterday as barracuda, as queen triggerfish, as mahi, blue runners, mackerel, swai, and that's the extent that I remember. From my surprise, a lot of people, probably because there is a lot of people from the Virgin Islands on this group, but they identified it correctly, and it is a blue runner.

Unfortunately, the exercise to highlight of that meat, we couldn't do at this meeting, because of health issues. I cannot prepare a blackened blue runner and leave it in the back of the room unless it is nuggets, the way it was, and that's the reason we did it the way we did, but it's an exercise to prove to you guys that a fish that is considered a junk baitfish can be

consumed, and it can be part of an effort to shift effort from traditional fishes to something that is -- I am talking about for Puerto Rico now.

Actually, I have to clarify the record, because I am talking about Puerto Rico, and you guys are way ahead of us on that matter, and I take my hat off to you, because I have been convinced of the value of that meat for different preparations, and I invite you to do it blackened, because it's just -- You can ask Alida, and you can ask Helena. They have tried it the right way at a restaurant in Fajardo, and it's just amazing. Thank you.

CARLOS FARCHETTE: Thank you, Marcos. Okay. Hearing nothing else, Miguel.

NEXT MEETING

MIGUEL ROLON: The next meeting will be in St. Thomas on December 12 and 13. Following the meeting of the council, we will have a meeting, and it's a workshop. As I said, it's an idea presented by Bill. Bill, Graciela, and I will develop the agenda with the Chair, and all the council members and people who are here will also be present at the meeting.

The setup will be a little bit different. We will have the decision-making in front, the Commissioner and so forth will be in front, and we the guys who know in each other, we will be in the back, but the idea of the meeting is that we will be able to discuss with the authorities what is it that we're doing regarding fishery management in the Caribbean and what is it that we expect from each other, and we will hear from them about what ideas Puerto Rico and the Virgin Islands government has for the next ten years, in terms of fishery management, and what things you would like to see the federal government do.

For example, in the case of the Virgin Islands, you already have stated that the trap reduction program is a reality, and, therefore, you will encourage the federal government to try to have compatible regulations in the EEZ surrounding St. Thomas, St. John, and St. Croix, and so the project will be complementary to each other in the jurisdictions, and so that's the kind of thing that we are going to discuss there. Until then, we will see you in December.

CARLOS FARCHETTE: Bonnie.

BONNIE PONWITH: Do you anticipate that workshop being one extra

day or two?

MIGUEL ROLON: One extra day. It will be December 14 only.

CARLOS FARCHETTE: Okay. Anything else? Hearing none, this meeting is adjourned. It is 5:12 p.m. Thank you all very much.

(Whereupon, the meeting adjourned on August 16, 2017.)

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