TABLE OF CONTENTS

- - -

TABLE OF MOTIONS

PAGE 135: Motion to appoint Todd Gedamke to the vacant position on the SSC. The motion carried on page 135.

PAGE 135: Motion to reappoint all the members of the SSC. The motion carried on page 136.

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CARIBBEAN FISHERY MANAGEMENT COUNCIL
173RD REGULAR COUNCIL MEETING
Webinar

APRIL 27-28, 2021

The Caribbean Fishery Management Council convened via webinar on Tuesday morning, April 27, 2021, and was called to order at 9:00 o'clock a.m. by Chairman Marcos Hanke.

CALL TO ORDER AND ROLL CALL

LIAJAY RIVERA: We will start with the roll call, starting with myself, Liajay Rivera, Miguel Rolon, Angie de los Irizarry, Alexis, Alida Ortiz, Carlos Farchette, David Ortiz, Diana Martino, Edward Schuster, Guillermo Cordero, Helena Antoun, Jessica Stephen, Jocelyn D'Ambrosio, John Walter, Jose Rivera, Julian Magras, Julie Neer, Kevin McCarthy, Marcos Hanke, Maria Lopez, Matt Walia, Michelle Duval, Nelson Crespo, Orian Tzadik, Rich Appeldoorn, Ricardo Lopez, Robert Copeland, Sarah Stephenson, Sennai Habtes, Shannon Calay, Stephanie Martinez, Wilson Santiago, Vanessa Ramirez, and Yasmin Velez-Sanchez. Those are all of my attendees on my list.

MARCOS HANKE: Today is April 27, 2001, and it's the 173rd CFMC Meeting, and we started at 9:03 a.m. Right now, it's 9:06 a.m., and we just listed the roll call made by Liajay, and we're going to pass now for Adoption of the Agenda.

MIGUEL ROLON: Before you go into Adoption of the Agenda, we need to excuse Graciela Garcia-Moliner, due to the passing of her father, and Vanessa Ramirez will join us after lunch. She's also at another family funeral this morning, and so those are the two that have been asked to be excused.

LIAJAY RIVERA: I also missed Christina Olan, who is the one driving the presentations.

ADOPTION OF AGENDA

MARCOS HANKE: Thank you, Liajay. On the Adoption of the Agenda, any extra consideration, or we need a motion.

MIGUEL ROLON: Mr. Chairman, tomorrow morning, we would like to start at 8:30, and there will be a presentation of a proposal by Dr. Virginia Shervette, and it's about the project that she's proposing the council to consider for funding for the lane snapper. Then, in Other Business tomorrow, we should read, for the record,

the letter sent in by Dr. Michelle Scharer regarding the red hind closed season and closure, for the record. Then you decide what to do at that time tomorrow morning, tomorrow at the other session, excuse me. Other Business.

MARCOS HANKE: Thank you, Miguel, and one other very small change on the agenda is that Sam Rauch will be presenting for Paul Doremus on the listening session.

MIGUEL ROLON: He will be presenting and running the meeting for that hour.

MARCOS HANKE: Yes, and we need a motion to adopt the agenda.

CARLOS FARCHETTE: Motion to accept the agenda as read.

TONY BLANCHARD: Second. Good morning. I am here with Julian.

MARCOS HANKE: Thank you, Carlos and Tony. There is a motion to adopt the agenda. Is there any opposition? Hearing none, the agenda is approved. Next is Consideration of the 172nd Council Meeting Verbatim Transcription. Any comment or a motion to accept it?

CONSIDERATION OF 172ND COUNCIL MEETING VERBATIM TRANSCRIPTION

CARLOS FARCHETTE: Motion to accept the verbatim minutes as read.

TONY BLANCHARD: Second.

MARCOS HANKE: Thank you, both. Any objection? Hearing none, it's approved. Executive Director's Report, Miguel.

EXECUTIVE DIRECTOR'S REPORT

MIGUEL ROLON: Thank you, Mr. Chairman. There's not much to add, except that we received the funding for this year, and we are waiting for maybe additional funds during 2021, but the monies that we have received are enough to undertake our operations for this year.

The council, as you know, is working with the WECAFC, the United Nations Western Central Atlantic Fisheries Commission, and we are participating in several working groups. This year, the council will be assisting in funding with NOAA's International Fisheries Office in the workplan that was adopted last year by the Western Central Atlantic Fisheries Commission. We will be able to have those meetings virtually this year, maybe in December, and we will

have a mix of virtual and in-person meetings.

Due to the pandemic problems that we all know is happening, the council staff will continue to do teleworking, with sporadic visits to the council office, and the building is also requesting every office to maintain a COVID-19 control plan, and so we will be continuing working until 2022, but the council staff is available for any business that we need to deal with within this year.

The August meeting was supposed to -- We were hoping to have an in-person and virtual meeting, but it's probably not going to happen, because we have problems in Puerto Rico, and elsewhere, and it seems that we have a third or fourth wave of COVID that will preclude us from having that meeting in-person.

The other issue that we were discussing before had to do with the -- Not issue, but the notification that the CCC will meet in May, and the agenda is already adopted by the majority of the groups.

Then the five-year strategic plan is going to be presented at this meeting by Dr. Michelle Duval, and we are proposing to have a one-day meeting of the council by July 21 to finish the process of adopting the document, and remember the document has to go through the public process, and so we can adopt the five-year strategic plan in 2021. That's what we have so far, Mr. Chairman.

MARCOS HANKE: Thank you, Miguel. I just want to recognize Andy Strelcheck from SERO. I just received Maria's text that he was having problems to connect. Do you have any words for the council, Andy, and words on the process?

ANDY STRELCHECK: Thanks, Marcos. I really appreciate the introduction. I'm serving as the Acting Regional Administrator currently for the Southeast Regional Office, after Roy's retirement on December 31, and so I look forward to working with you.

MARCOS HANKE: Thank you very much for attending our meeting, and thank you very much for your interest, and let's keep moving forward. Thank you very much. We have the next item on the agenda is the Southeast Data Assessment and Review, that presentation.

SOUTHEAST DATA, ASSESSMENT, AND REVIEW (SEDAR) UPDATE

JULIE NEER: There is no presentation, and I was just going to give you guys an update on SEDAR 80, Caribbean queen triggerfish. This is Julie Neer, by way, SEDAR Coordinator. For this assessment, SEDAR 80, queen triggerfish, the assessment started -

- I do have -- There is a schedule that was supplied to you guys in the briefing book, I believe, and we could put that up, if you wanted to see that.

Basically, we started, in early January of this year, with this assessment, and we had a data scoping call for the life history group, and it was at that time that the group was informed that there is no -- That the ages will not be ready until the end of September, and so there was some discussion amongst the group, and council staff was present as well, and SSC representation as well, and it was determined that we really want those ages.

The Science Center informed the group that they could continue with the schedule on track, as planned, and finishing it on time, but it would certainly limit the availability of options, with regard to what type of assessments we could do, without having those age data, and so it was determined by the group that they prefer to push the assessment back and to allow for that age data to be made available.

Instead of the assessment basically being underway now, full bore, with a completion date in the fall, we now have pushed most of the assessment process back, waiting on that age data, and now the assessment will be completed in April of 2022 instead of -- I believe it was originally October of 2021, but the group really thought it was critical to have that age data available for consideration and inclusion, for the possible modeling options that it would afford us, and that's pretty much all I had with regard to an update for that.

MARCOS HANKE: Thank you very much. Do you have any questions or any other observations for the council, or that's it?

JULIE NEER: That was pretty much it, with regard to triggerfish, and then I believe Graciela mentioned that, at some point, the council is going to talk about -- Well, I heard you're going to talk about a proposal, potentially, for lane snapper. The Steering Committee is meeting in May, May 13, at which time we need to know the council's requests for 2024. We need to know what species, what platforms, you guys are interested in having assessed for 2024. We will need that information in about three weeks.

MARCOS HANKE: Thank you for putting in context the need of those information to come up to the council. Thank you very much, Julie.

JULIE NEER: Sure.

MARCOS HANKE: We have the next item on the agenda, if there isn't

any questions for Julie. Hearing none, the Southeast Fisheries Science Center. This is the part of the agenda for the Southeast Fisheries Science Center, and, Miguel or Liajay, who will be presenting on that part?

SOUTHEAST FISHERIES SCIENCE CENTER (SEFSC) UPDATE

CLAY PORCH: Good morning, Marcos. I just got back from the chiropractor, and so I think John Walter was going to give a little synopsis of where we are, but, John, you're muted.

MIGUEL ROLON: We have some difficulties on John Walter's end. He is trying to join in again.

SHANNON CALAY: Can you hear me?

MARCOS HANKE: Yes.

SHANNON CALAY: We can wait a few more minutes for John, but, if John is not able to get his audio straightened out, I am prepared to introduce this topic.

CLAY PORCH: Why don't you go ahead, Shannon?

SHANNON CALAY: Okay.

MARCOS HANKE: Thank you, Shannon.

SHANNON CALAY: We do have some news to announce, and I will be yielding the floor, ultimately, to Kevin McCarthy, but, first, I did want to introduce Kevin McCarthy. Many of you know him well, and he has been a member of the Caribbean SSC for a number of years, and he is now our Acting Branch Chief of the new Caribbean Branch at the Southeast Fisheries Science Center, and he will be introducing them shortly.

Also, I wanted to introduce Keeley, and, unfortunately, John knows -- John could introduce Keely much better than I can, but Keeley is our new Communications Officer at the Southeast Fisheries Science Center, and she's working directly with Clay and with John to facilitate our communications. We really want to say that I think that's a great addition to our directorate, and we look forward to improving our communications with this council, and so, at this point, I will now open the floor to Kevin, who will tell you more about the Southeast Fisheries Science Center topics.

MARCOS HANKE: Good morning, Kevin. Go ahead.

KEVIN MCCARTHY: Good morning, Marcos. Thanks, Shannon, and thanks, Marcos. Good morning, everyone. I won't belabor the introduction of myself, since Shannon has already done it, and a number of you already know me, but I would like to introduce the staff of the newly-formed Caribbean Branch at the Science Center in Miami.

Some of the names you will recognize, and some will be new to you all, and so Nancie Cummings, Adyan Rios, Stephanie Martinez, and Refik Orhun comprise the staff, along with me. Of course, Nancie and Adyan are familiar to a number of you, from previous stock assessments, and Nancie also has an important and leading role in the WECAFC group.

Stephanie is new to the Caribbean, at least in terms of her work with the Science Center, but she's from Puerto Rico, and so she's not new to the Caribbean in her own life. Refik has done, for years now, work in the Gulf of Mexico, but he's also done a lot of work with aquaculture, and so the group itself brings together a lot of expertise, data supply, data analyses for stock assessments, stock assessments themselves, as I mentioned, and aquaculture, with Refik's background.

Also, a number of folks have been involved with outreach and education, and Adyan Rios, for example, has done some work in the region with outreach and education, and a number of you may have seen her presentations in the past.

Just a couple of other items, before I yield the floor back to Clay or John or Shannon, whoever may be picking up the baton from here, but we're working -- The group here is working collaboratively with DPNR and DNER and universities in the region, the University of the Virgin Islands, for example, other federal agencies, and contractors on more than fourteen projects in the region, and so we're excited to keep those going, and I'm excited to have some other folks coming in to work on those.

These include improved port sampling, life history information, gear selectivity issues, and we also want to improve our communications with you all, not just with the new communications director, but in general directly between this new Caribbean Branch and council staff and other folks in the region, but I would say that we want to maintain the channels of communication that we've already established.

For example, council and SSC requests should still go to Larry Massey, John Walter, Shannon Calay, and now me. We're also working with other folks in the Science Center that aren't necessarily in

Miami, although there are some other folks in Miami that will continue to do Caribbean stuff. Kim Johnson, for example, is in the Miami Lab, but not in the Caribbean Branch, and so we've got some cross-branch work going on within Miami, and many of you may be aware of this, but we've got staff in Panama City and Galveston and the Pascagoula Laboratory, among others, that are doing work in the region.

One of the things I'm going to do is set up a regular meeting, maybe a monthly meeting, with council staff, with Graciela and whoever else is appropriate, just to be talking more and staying on top of issues that we don't want to fall through the cracks, due to lack of communication.

I want to reiterate a number of the points that Julie Neer just made, that SEDAR 80 is underway, queen triggerfish, and the project schedule, as she has mentioned, has been adjusted to allow some of the critical age data from Virginia Shervette to be included, and there is an updated schedule on the website.

I think we also would like to reiterate that a stock assessment prioritization should be conducted. Let's get the highest-priority species on a routine schedule and some sort of appropriate assessment frequency. We can work, in this new Caribbean Branch, to help facilitate that, to help facilitate identifying the high-value species and indicator species that should receive some high priority in regular assessments.

We've got just a couple of science issues that I will go over, and then I will yield the floor back to others at the Science Center. We do have Cooperative Research Program funding, and we've got a project in Puerto Rico right now, and the Cooperative Research Program -- That is a project -- Those are projects that directly involve the industry, and so either commercial folks or the people from the recreational sector are directly involved in the process with scientists, and so that's a program that we're very excited about.

It facilitates not only the science, but it gets the community involved to take an active role in collecting the data for management of their resources, and so I think that's a very important program, and we're really excited about it, and hopefully that funding will continue into the future, and we'll expand the programs and the research that we're doing through that mechanism.

One of the other issues that we'll be working with Puerto Rico DNER scientists is to automate the correction factor calculation. As you all know, the landings in Puerto Rico utilize a correction

factor to calculate, or to estimate, the total landings, and that, for Puerto Rico staff, is fairly laborious, and so the Science Center staff are going to work with DNER to improve that process.

Right now, it takes quite a while to get the data entered and to analyze the data, and that's a process that we think we can automate and make it a bit more streamlined and rapid. That way, we won't be waiting longer than is absolutely necessary to have those landings in. Because the landings are so important to the management process, we would like those to come through as quickly as we can get them through.

We're also working with Virgin Islands DPNR Division of Fish and Wildlife scientists to improve port sampling efficiency. Folks at some of the landing spots and the boat ramps may see -- They may see the Fish and Wildlife scientists out. What we're trying to do is improve the speed at which port sampling occurs. We don't want this to be any more burdensome to the fishers than it absolutely has to be, but the landings and the size composition of the landings are critical for management, and so we're excited that this project is beginning, and so you may see a bit more activity with DFW staff.

They are going to be using photography to help facilitate this process, but what they'll be doing is they're taking pictures of the landed catch. They're not taking pictures of people, and they're not taking pictures of vessels. They're taking pictures of the catch so that we can more readily automate species identification, and we'll get lengths of the fish from those photographs. I mean, this is a process, and we'll have to work through it, and so it won't be fully underway immediately, but it's a method to try and improve sampling efficiency, so that, when somebody comes in with a bunch of fish, and they're due to be sampled, it won't take an extraordinarily long time to sample their catch.

What we're trying to do is make this less burdensome for the fishers, and so that's the kind of activity that you may be seeing in the coming weeks and months at some of the landing sites in the Virgin Islands, and so that, I think, is all that I had, and so I'm prepared to yield the floor back to John or Shannon or Clay, whoever needs to take this up.

JOHN WALTER: I wanted to just apologize for my inability to manage Zoom. Good morning to everyone, and we're really happy to have Kevin onboard and to have formed the Caribbean Branch, and I won't take up any more time here on that, but I think we'll be working very closely, and it's going to increase our ability to focus on

the Caribbean and provide a much higher level of service.

Also, I think Shannon noted Keeley Belva, our Communications Manager, and so we'll be able to communicate a lot better, as we've hired a dedicated communications manager, and that's a really big thing for our Center, and so, with that, I will yield to anyone else from the Center. Thanks.

CLAY PORCH: Thank you for that, John and Shannon and Kevin. I really appreciate it. You did a very thorough job. The only thing I would add is that, as I mentioned at a previous council meeting, the Southeast Center is going through a complete reorganization, and so I am the blame for that, but the idea is that we're trying to find ways to be more efficient with the resources that we do have.

As many of you know, resources have been pretty scarce everywhere, including in the Caribbean, and we just got a $1.2 million budget reduction this year, and so it's all the more important for us to try and figure out how we can be more efficient, and one of the ways we can do that is to centralize across our own organization, both in terms of things like administrative tasks, but also trying to do a better job of having people who are experts in a particular field supervising only that field and not trying to be a jack-of-all-trades.

We have completed two phases of that reorganization, and, from our perspective, we've completed the final phase, and we're almost ready to go, but it's just that it's hung up in the Department of Commerce now. Hopefully that will happen soon, and then we'll be completely reorganized, and you'll start seeing a lot more efficiencies.

As part of that reorganization, we stood up the Caribbean Branch that you've already heard about, and John Walter's position as Deputy Director for Council Services is also part of the reorganization, and that's something that I put in place, because our Center is the only one that has three councils, and, really, a fourth council, when you count HMS sharks, because, although they're not formally a council, they act like one, because the sharks aren't managed by another management body.

Essentially, we have four councils, and the most any other Science Center has is two, and being that divided, with so many meetings, it's really hard for me to give the due attention to everything, and so John is going to be my right hand, helping me staff the meetings and make sure you get the service that you deserve, and, as he mentioned, Keeley Belva is our new Communications Lead, and

we're looking to step up our game in both internal and external communication, and I will say that we're courting funds to try and expand our engagement in the Caribbean.

We have some good leads, and possibly we'll end up getting some funds, but it's really too early to say anything definitive yet, but, overall, I have to say that I'm pretty excited. You listened to that long list that Kevin gave of all the accomplishments that we're making in the Caribbean, and the spiny lobster assessment is a huge one, actually, and that's the first time we've had an assessment of that level completed in the Caribbean, and so we're really excited to see that get used in management, and, overall, just we're really happy with the way people are coming together, and we're starting to see some real progress in the Caribbean, and so thank you very much.

MARCOS HANKE: Thank you very much. Does anybody else from your group want to speak? Otherwise, I have comments. I want to welcome all the new members of the Caribbean Branch, and, at the same time, I want to say thank you to the previous people that have been addressing this and forming this great group to work with our region, especially to Kevin, Adyan, Shannon, and Kevin. The communication with the fishermen has been improved, and especially based on working with the fishermen and being available and transparent during the processes.

Also, they're very patient in explaining the technical and scientific elements to the fishing community, and that's essential for this area, because this is where the connection takes place, and that didn't happen in the past, and this team is able to do it, and, in this way, I'm very happy for this new timing and that new accomplishments and the new things coming up. Thank you to all, and are there any comments from the rest of the council members before we move on? Any questions?

Hearing none, if you guys see, I am speeding up the whole process, because we have a very loaded agenda. Thank you very much to the presenters so far. Hearing no questions, we are going to go to the next item on the agenda, which is the Scientific and Statistical Committee.

SCIENTIFIC AND STATISTICAL COMMITTEE REPORT

RICHARD APPELDOORN: Thank you, Marcos. There is a presentation. This is the report of the SSC. At our last meeting, we discussed two issues, the ecosystem conceptual model and updates to the spiny lobster ABC process, and so I'm going to go first with the conceptual model.

This is going to be somewhat of a review from what I gave last time to the council, and so the SSC has been working on a single generic model, and it's been a very evolved process as we've gone along, and that model, as you will see, is highly complex, and this reflects the diverse expertise and experience of the SSC members, and we have biologists, stock assessment people, economists, sociologists, et cetera, and so we have a very broad area of expertise represented, and that expertise and the issues that they deal with are expressed in the model.

One of the concerns is the time to develop a model versus how many models we were asked initially to do, and so we've been working on one generic model, as opposed to three separate models for each platform, because we have spent all this time just on one model so far, and to triple it would be -- Well, it would be an ongoing, perhaps never-ending, process.

We were also concerned about the independence of the product. That is to say we're developing a generic product, and, if there's any expertise on the platforms, it's largely with Puerto Rico, but, for any of the platforms, for the SSC to really develop something, we would have to heavily rely on the input and knowledge base of the people from those areas, and that would be specifically the DAP members, who have already produced their own models, and so, to keep our model independent, that was another reason for not doing three separate models. We think that the generic model will be suitable for comparison purposes, and I'll talk more about that at the end.

Just as a review, we started out looking at a bunch of sub-models that spanned the human dimensions that you see on the left and the natural dimensions that you see on the right, and so each one of those sub-models has a bunch of things in them, and the lines there represent potential connections between those sub-models, but, at the time -- This is just kind of where we were at that time, and things have gotten more complex.

As I said, it got more complex, and this was still early in the stage, and this was back in September of 2020, and we have progressed from there, and this is -- We have eight sub-models, and those sub-models vary in the number of components, and the numbers listed in there show the number of components within each sub-model.

It turns out that, if you were to look at all the potential connections, that's 64,000 potential connections that you're going to argue in committee, and you can see how laborious the process

would be.

We broke this down, and we were looking at, first, the connections within the sub-models, and this is a matrix of all the sub-models, along the top and along the sides, and so the diagonal is within sub-models, and the kind of peachy coral color that you can see in those boxes represent where there are connections within a sub-model, between components of that sub-model. The green, don't really pay much attention. That was early thinking on potential connections between sub-models, but we haven't gotten there really yet, and so you can see that there's a lot of connections just within sub-models, which is why we have the sub-models, but there is a lot of white space out there that remains to be looked at.

We had this exercise where we were looking at the priority connections between the components within each pair of sub-models, and so, for each pairing of sub-models, we asked each of the SSC members to identify their three most important connections, the direction, as is it a positive relationship or a negative relationship, and their strength, and that is to say low, medium, or high in their strength.

This would produce what we were thinking of at the time as interim results that could be used by the council and the TAP, and they could also be used by other projects, like the Lenfest project and the ecosystem status report.

To give you an example of what we went through, this is the spreadsheet we were working on, and there's fifty-six sets of comparisons across those eight sub-models, not including and without having the within-sub-model connections, and so we asked each one to say, okay, what would be the driver component in one sub-model and who would be the target component, or the response component, in the other sub-model, what's the direction of that relationship, and the strength, and so this is a spreadsheet that everyone had to fill out on the SSC.

As an example, again, and I think I gave this at the last review, but, just as an example of what we were thinking about, the three most important connections from the socioeconomic and cultural drivers sub-models affecting the fisheries sub-model could be seafood imports and exports affecting commercial catch, market demand affecting commercial catch, and tourism affecting recreational catch. In this case, there were two driver components affecting the same component, as shown in the next one.

This is the list of the components in each one of those models, and you can see that, as an example, here are three things that

could be affecting two other ones, as perhaps the priorities, but then, in a graphical form, it would look like that. It's a little bit more messy, but it shows the same thing.

Here's how you would score that on our sheet, where you see the driver component or response component, the direction, and you can see, for seafood imports/exports, that direction is zero, and that means it's both positive or negative, depending on whether you're talking about imports or exports, and then some example of what the strength might be, in terms of medium and high in this case.

This is an example of the actual outputs, and this is just one of those fifty-six sets of comparisons, and this is competing uses of resources versus land-based uses, and you can see that, although we were asked to identify our three top priorities across the SSC, there were ten connections that were given by at least one SSC member, and the scores that you see are the strengths, and so three would be a high, and we get a number of data points from that.

We get what was the mean score, if you're looking along the right-hand side there, and we also get the tally, which is the number of SSC members who ranked something as being that high, and then we get the product of those, which would be the sum, and there is also variance values that are associated with it, and so we're able to take this ranking process and generate some quantitative information, in terms of where the SSC saw importance and how that importance was scored. Remember that, with each one of these, there's also a direction that's associated with these, and so this is the kind of information we were generating.

Each one of these comparisons was discussed, and people were allowed to change their scores, after hearing arguments from other people, and so it took a while to get through all of this.

The overall result was that there were 484 connections identified between components across sub-models. The minimum number would have been 168, if we all agreed on what the top three were, and, as a consequence, we had a 288 percent increase over that minimum.

This gives you a color representation, and now we're ignoring the diagonal, and the red blocks are where we see connections between sub-components, and you can see there's a lot of red there, and we can use just this graphical output to identify some key areas right away.

For example, there are thirty-six cases where natural disturbances was identified as being an important driver across many of the sub-models, and so a lot of components within the sub-models were

identified, and so, if we're looking at what's the role of something, natural disturbances have a strong influence across the system as a whole.

To a lesser degree, but still strong components, were coastal development and the regulatory structure, affecting, again, a lot of the components in the various sub-models, and so there's some key sub-components that have a broad reach across all of the models.

We can also look the other way, which identifies who is being impacted a lot, and you can see coral reefs, and here is the lead, where there were twenty-eight components from various sub-models that are impacting coral reefs. Fishing ground is the next one, and there are twenty-seven components that affect the fishing grounds component, and seagrass beds were affected a lot, as were inshore forage fishes, and this is not surprising, and these are the basis of our fishing, the habitats, the food base, and the locations where things occur.

We had 484 connections across sub-models, and we add those to the 304 connections between components within each sub-model, and so we have 788 total connections within the model as a whole, and we're getting quantitative outputs for these that reflect the diversity and strength within the SSC.

I think compilation is still in process, although it may be close to being finished now, in the sense that there were asked to be written descriptions and definitions of each of the components, and that information and discussion, regarding the strength and direction of stuff, and that's all stuff that's extracted from the transcripts of our discussions from these meetings that have been going on for I think over a year.

Where are we? The SSC has finalized its generic ecosystem model for the U.S. Caribbean, and so we would like to stop there. The SSC believes that the ecosystem conceptual model, in its current state, meets the objectives that the SSC was tasked by the council, following the Caribbean Region EBFM Roadmap Implementation Plan.

The SSC also feels that the generic model it developed should be sufficient and that developing three separate SSC island-based models is not necessary to meet the objectives of the overall process of developing a fishery ecosystem plan and, specifically, the next step of comparison of conceptual models.

The SSC recognizes that the ecosystem conceptual model will be useful in developing the next steps in the process of developing

a fishery ecosystem plan and in addressing concerns specific to the SSC, and here are some examples. It will be useful to generate questions to help prioritize management strategies, such as management strategy evaluations. It can help generate questions to help prioritize future research and identify data and knowledge gaps.

It can be used to identify hypotheses to be tested using available data in quantitative modeling approaches, and we noted that, of the identified linkages that were given priority, 28 percent of them actually have data, and so that shows us that there are places that we can work, but then there is also lots of gaps that we need to look at to try and get the data for them, and so this is just how some data does not account for the data extent or quality, but at least there is some data for 28 percent of those.

Continuing on examples, we can identify key ecosystem linkages and indicators for risk assessment, and we can explore different visualizations and communication tools for effective outreach of conceptual model outcomes. There are specific issues, like magnitude, variability, and directional relationships, that will need to be dealt with, or confronted, in order to realize these next steps, and so there's still work to be done.

I think that's it, and so our conceptual model, as I've joked before, kind of started looking like this. Then things actually got out of hand, and it was looking a lot worse, but I think we've actually gotten things a little bit more under control, and it looks a little bit more contained, but we did not see the -- At this point of having to slog our way through 64,000 boxes, when we've already got seven-hundred-and-eighty-something taken care of.

That's the end of the conceptual model review, and then now we're going to talk about our recommendations regarding OFLs and ABCs for spiny lobster. The recommendations that we're making are going to be in response to things that were brought from the council and the Science Center, and so these are going to be discussed, I believe, by the Science Center later this morning, or at least later in the council meeting, and so the details of those I think you have to wait for, and I will just give what our recommendations are on this.

First of all, there was an issue that we are making changes just by kind of updating data and not really changing how we're doing anything, and it was requested by the Center to allow the Chair to approve those updates without having to call a full meeting of the SSC, and the SSC voted to accept that, and so they will allow the

Chair to approve updated OFL projections and ABC estimates for spiny lobster using updated landings data and expansion factors, such as Puerto Rico for 2019, which should be coming online, for presentation to the council, and so that should simplify things as we go forward.

The SSC requested the Center to run updated projections with revised Puerto Rico landings data for spiny lobster for 2019 and the 2019 correction factors and then updating the ABCs and OFLs accordingly for the five-year period of 2021 to 2026.

The SSC recommends, for the purposes of the Draft Framework Amendment to the Puerto Rico, St. Thomas/St. John, and St. Croix Fishery Management Plans, to modify spiny lobster management reference points based on the SEDAR 57 stock assessments, and the SSC recommends both a constant catch or variable catch ABCs for 2021 to 2023, as has already been done, and so we're just being consistent with our recommendation that either one of those approaches is okay.

The SSC requests that the Science Center perform an interim assessment for spiny lobster by April 2022 and update all the landings and the TIP data into the model for the three islands. The final data will be for 2020 or 2021, depending on what's available at that time.

The SSC reminds the council to request that spiny lobster be scheduled for a SEDAR operational assessment, given that the previous assessment used data from 2016. Note that the SEDAR data operates with a two-year lead time, as Julie had mentioned previously, and so we're kind of running toward the end of that period where have confidence in the data, and so we want to look forward to making this a regularly-scheduled process.

In the unlikely event that subsequent rulemaking with updated spiny lobster OFLs and ABCs and ACLs is not in place by the end of the SSC-recommended year period of 2023, the SSC recommends the following: For each island group, for both the constant and variable scenarios, that the OFL and ABC for 2024 and beyond would be equal to the variable OFL and ABC for 2023, until modified by subsequent rulemaking. This is a situation we are hoping would not occur, but we wanted to be on record that this is what should happen, should something unfortunate happen.

I think that's the last one. No, there's one more. We recommend that, for spiny lobster stocks, the council continue using the arithmetic mean for ACL monitoring purposes, that is to say for triggering the AM correction and calculating the length of AM-

based closures. This was a question that was brought to us from the Science Center of should we use the geometric mean or the arithmetic mean. What we've done in the past is the arithmetic mean, and we would like the -- We recommend to the council that they continue using that.

We had one other concern, and this is actually going to come up this morning. The SSC recommended to the council that they request to the Center to give high priority to reviewing the MER Report on the Puerto Rico port sampling and catch validation project. We think this is really going to be a valuable tool, going forward, on how to improve statistics landing collection and the correction factors in the future, and we're excited about that, and we would like to see that presented to the SSC, as soon it clears approval through the Center, and then try to utilize this information to make those improvements within Puerto Rico, following recommendations, as reviewed by the various groups that are involved.

We're excited about that, and we would like to see it move forward as quickly as possible, and so that's my last slide, and I understand there are some questions.

MARCOS HANKE: Richard, we have Tony Blanchard.

TONY BLANCHARD: Good morning, Rich. I see that the SSC recommends, on the conceptual models, to only have a generic model. I mean, in my opinion, I don't believe in anything being generic, for the simple reason, as I understand, the line of reasoning that they want to come up with the generic model, but it would be like going to untuck it, and you have a custom made shirt to fit you, and then you go to the regular store and you buy a shirt, and that shirt will not fit you like the custom-made shirt. I would just like to put that out there, that, in my opinion, I don't believe in the generic fit, and I will just leave it at that.

RICHARD APPELDOORN: Okay. I think your point is well taken, that the generic model is not custom designed to fit any of the islands, and, if the council and the TAP want us to go that extra step, we can do that. It will take a lot of time. However, we think that there are a lot of parallels between all of the models that have been used, and they are custom fit, from the DAPs' point of view, but I think that they all fit in that kind of framework, but, for the SSC to continue down this road, we would have to get -- If the council and the TAP wanted an independent assessment, we would have to get expertise, further expertise, on those systems that would be independent of the DAPs, and I don't see that happening, because the DAPs are in fact the leading expertise in these areas.

One could then say, okay, we don't want something totally independent, but we would like a hybrid system that is custom made to that, and, if the council would like us to do that, we're certainly open, but it's going to take time and a lot of meetings to do that, and so your comments are correct, but this is also the realities of time and effort that we're talking about.

MARCOS HANKE: Thank you, Richard. Any other questions? Go ahead, Tony.

TONY BLANCHARD: I don't believe in cutting a corner, and I understand that we're taking a sharp curve, because usually, and I'm not saying all the time, when you take the shortcut, or you don't go the route, you end up running into a problem where it takes you more time, because you realize that this just ain't working, and you should have just done it the right way first, in my opinion, and eliminated going over what should have been fixed.

MARCOS HANKE: Thank you, Tony, for your follow-up. Does any other council member wish to participate or have any question or comment?

ANDY STRELCHECK: I have a question about the generic model and then a couple of questions about spiny lobster. First, Rich, thanks for the presentation and the work on the SSC. I guess I'm interested in your perspective, the SSC's perspective, with regard to the generic model and kind of one versus three models.

I'm getting up to speed on this, but it seems like the drivers and impacts, as identified in the generic model, likely are going to be similar drivers and impacts across all three platforms, and so I'm just curious kind of your reaction to that comment and kind of the need to go to three islands versus the ability to use this generic model kind of across the three platforms.

RICHARD APPELDOORN: First of all, I think that you're right that there is similarities. Where you see a lot of differences are -- Well, not differences so much, but it's that things will collapse down, perhaps, when you start going into each of the island platforms, because perhaps a lot of things are concentrated in say one agency, and so we have a lot of boxes, but they all go down to like one agency is handling those kinds of things.

Some of the problems that we were dealing with are much more prominent in Puerto Rico, which, for example, has permanent rivers, and so runoff is much more of an issue there than in St. John and St. Croix and St. Thomas, but I think those things would show up when the TAP and the other group -- Like Lenfest is also going to,

I think, use these models and try to look at stacking these things, and I think that process will identify where we have those similarities and differences, and, if it becomes a problem, in those stages, they can certainly come back to us and say, hey, wait a minute, we need some guidance on how you would handle this in this specific situation.

I think, at this point, the model is so complex that someone really needs to take a look at it and use it and find out if it's suitable for the purposes for which we were asked to produce it for, and we do have a couple of TAP members on the SSC, and they were sort of comfortable, at this point, with let's see how this works, before we go and spend a lot of time doing something that maybe we already have sufficient information for, and so that's kind of where we left it. We're not averse to going forward, but it was kind of like we've done a lot of work, and we would like to have someone who is going to use this say this is good enough, or it's not good enough.

ANDY STRELCHECK: Thanks, Rich. That's helpful context. Then I guess the two questions, which aren't necessarily directed at Rich, but there was two recommendations that the SSC was offering to the council, and one was to ensure that we don't lose sight of scheduling an operational assessment for spiny lobster, and the other pertained to the Science Center's review of the MER catch report, and so I don't know, Miguel or others, if we need to make a recommendation regarding the operational assessment for spiny lobster, given the coming Steering Committee meeting, and then I would certainly be interested in hearing from the Center about the review process for the catch report and any thoughts on an independent peer review of that.

MARCOS HANKE: Go ahead, Miguel.

MIGUEL ROLON: If I may, that discussion is exactly what we need to do, and I would like to hear from the Center the reaction to the questions posed by Richard's report, if we want to pursue this in the best way possible, and so I believe the next thing is to hear from the Center the reaction to the questions and the requests by the SSC.

Regarding the models, remember this is not the last time that you are going to be seeing this. The next step -- Also, I want to remind the group that you can have the biggest model you can get, but, under the Magnuson-Stevens Act, the only thing the council is supposed to be working at is anything that is related to the fishery, and so I believe that the SSC has done the work that it was for them to do, and now we have to wait for the Lenfest group,

and the Charitable Trusts is working on the other components of the models, and then we need to sit down with those three, the SSC and those two other groups, and look at the similarities that we have and the differences that we have, so we can put together a list of next steps.

Certainly Tony's comment is not -- We need to go back to each one of the islands, the island-based FMPs, and we need to see what part of the model fits into each one of the areas and what parts do not fit and then how can we come up with the best available approach for this model, and so that's where we are, and I believe that maybe somebody from the Center can answer the question that Andy posed and the SSC.

CLAY PORCH: Marcos, I can jump in on that. We haven't had a chance to thoroughly review the MER report, although we think it's a huge step forward. What we plan to do is get somebody with survey statistics expertise, just to give it an extra sort of independent look, just like we do with any of our information, and we want to make sure it's the best available science before we push forward on it.

As for the spiny lobster operational assessment, we do support that. It's getting kind of out-of-date now, because it's taken a while to act on the information, and so, ideally, we would get an operational scheduled here fairly soon. It shouldn't be a huge lift for us to pull that off.

MARCOS HANKE: Thank you. Miguel, do we need to do anything, any other steps?

MIGUEL ROLON: No. From this meeting, Graciela and I will pull together a list of actions regarding the spiny lobster, and we will report back to you at the August meeting. There is a lot of conversations that we need to do with the Center, and, of course, we are going to touch base with the SSC, but, at this time, I believe, Mr. Chairman, that the SSC report is, number one, finish the task that was assigned to them at this time for the model, and, also, it incorporates the recommendations regarding the spiny lobster.

Certainly many of the acronyms and things that we use here will be explained a little bit better at the August meeting, so that everybody will understand where we are, and so I believe that that closes it, and, Mr. Chairman, I would like to suggest for you to ask those people who came later, and I just admitted Nicole Angeli, to identify themselves for the record.

MARCOS HANKE: I would like to recognize the new people. Please identify yourselves on the record.

TODD GEDAMKE: Todd Gedamke has arrived.

MARCOS HANKE: Thank you very much. Anybody else?

UNIDENTIFIED: Hi. This is -- (Name not audible on the recording.)

MARCOS HANKE: Thank you.

LOREN REMSBERG: Hi, Marcos. This is Loren Remsberg from the NOAA Office of General Counsel.

MARCOS HANKE: Thank you very much. Anybody else?

TAUNA RANKIN: Tauna Rankin is here.

MARCOS HANKE: Thank you, Tauna. Chelsea, are you there?

MICHELLE SCHARER: This is Michelle Scharer, SSC.

MARCOS HANKE: Thank you, Michelle. Do we have anybody else?

ADYAN RIOS: Adyan Rios, Southeast Fisheries Science Center.

MARCOS HANKE: Thank you, Adyan. Anybody else?

MIGUEL ROLON: I have Virginia Shervette that just joined in.

MARCOS HANKE: Welcome, Virginia.

VIRGINIA SHERVETTE: Hi. Sorry I'm late.

MARCOS HANKE: No worries. I don't think we have anybody else. Otherwise, please post in the chat, and we will recognize you later on. Let's keep moving with the agenda. We have the next presentation with Ecosystem-Based Fishery Management Technical Advisory.

ECOSYSTEM-BASED FISHERIES MANAGEMENT TECHNICAL ADVISORY PANEL REPORT

SENNAI HABTES: Good morning, and thank you for the recognition, Mr. Chair. This is Sennai Habtes, Chair of the Ecosystem-Based Fisheries Management Technical Advisory Panel. Good morning again, everyone, and I know we have a busy schedule, and so I won't take up too much of your time, but I wanted to update you on some

of the things that are ongoing with the EBFM TAP, or the Ecosystem-Based Fisheries Management Technical Advisory Panel.

We held our most recent meeting February 4 and 5 of 2021, and what we went through there was a review of the current updates from our partners, meaning what's going on with the Lenfest project, as well as the ongoing process for collecting and analyzing existing datasets that can be used to understand overall ecosystem trends within the U.S. Caribbean, and also a better understanding of the process for which we're going to collect information on conceptual models through these stakeholder meetings that Lenfest and other partners are conducting.

We also identified a need for creating a sub-group on data validation and hosting, and I will bring that up in a recommendation to the council a little later, but, essentially, as we are working with all of our regional partners to collect and analyze these existing datasets, we've realized that there is a need for us to get clarification from the council on how we can create a centralized repository for the hosting, QA/QC, and the sharing of this data, and even if that's necessary for what we're trying to do.

In addition, we have identified the need for some of the council's help inviting some regional agencies and partners to submit data that we can use for identifying these overall ecosystems trends, and, finally, we approved the latest drift, or finalized a draft, of the FEP goals and objectives, which I will present to you, and we would like for the council to either provide any necessary feedback that they feel fits, or we would suggest that you guys make a motion to approve them.

The main thing that we came up with was the timeline of activity that the TAP is going to follow to conduct the necessary requirements, in order to draft -- End up with a final process for drafting an FEP.

As you guys know, that is going to incorporate two larger subsets of work. First, it's looking at the overall indicators and trends in ecosystem services, as well as data across the U.S. Caribbean, and the other is to look at the management objectives and conceptual models derived from stakeholders and the SSC and do the stacking technique that Rich had described to understand where these overlap, where they can be used, and how they best fit for being used to identify threats and factors that influence change in overall ecosystem services in the U.S. Caribbean.

What this looks like is we have finished revising and drafting the

EBFM TAP goals, and we have that to present to the council, and we will continue working on the existing datasets through the end of 2021. We hope to have, by that time, either December or January, December of 2021 or January of 2022, a finalized repository that contains all the information and datasets that we'll be using for analyzing ecosystem trends.

Hopefully, within August of 2021, we will have completed all of the stakeholder meetings and designs of the conceptual models that we will be analyzing in the TAP, and hopefully, by April of 2022, we will have completed the process of looking at the different conceptual models that have been created by our partners and Lenfest, as well as the one that was associated with the SSC and the ones that will be devised through the stakeholder meetings, to identify best uses for the overall FEP that we're trying to draft.

By December of 2022, we hope to have the strategic objectives prioritized and a completed outline, as well as the beginning of some of the writing for the FEP, and continue that work towards developing operational objectives with concrete action items for writing assignments associated with the FEPs.

Then, finally, in 2023, the plan will be to develop performance measures for the last section of the FEP and a draft management strategy that can be submitted to the council for approval, as well as a feedback mechanism for using the information from the FEP that can also be improved by the council towards creating operational decision-making using ecosystem-based fisheries modeling. Then, finally, complete the FEP document and submit it to the council for approval between August and December of 2023.

Having said all that, what's ongoing currently is our partners at Lenfest, and I want to make clear that this is an additional project that is outside of the TAP, but many of its members are people that work within the TAP, and so they are doing this work as part of a separate proposal that's funded by the Lenfest Program, and we will evaluate their efforts as part of the TAP.

They are continuing holding stakeholder meetings with Melivora Consulting and Lenfest. They had the first with St. Croix environmental NGOs on April 22, and that will continue throughout the summer, and then the Lenfest project team will work to create and develop stakeholder meetings to identify the basis for conceptual models with regional scientific agencies and fishermen over the rest of the summer.

That's what is ongoing, in terms of all that, as well as the continued reaching out to agencies, to try and collect all of the

necessary information for understanding the overall ecosystem trends that we're trying to put into these conceptual models.

Having gone overall of that, some of the things that we've identified as needs, which would like to suggest that the council approves, and, if the council is so moved, they are welcome to use the wording that I have provided on the slide, but the first thing is that we are really in need of creating a sub-group within the TAP to create some sort of data repository as well as the procedures and methods by which we evaluate how we within the TAP can host and share that information with partners.

A lot of the information that comes in has privacy concerns, and so we want to make sure that we have clear protocols for using that data appropriately, and so what we would like to do is create a sub-group that contains members of the TAP as well as -- Excuse me. I'm speaking about the next slide, and I'll come back to that one.

What we're currently requesting is that the council allows the TAP to work with council staff to draft letters and email a request to other agencies and institutions within both the USVI and Puerto Rico, as well as nearby jurisdictions, that will allow us to have them share data that may be useful in understanding overall trends in the ecosystem, inviting them to share their data with the EBFM TAP. This is a recommendation, and we are asking the council to consider it, and, if necessary, vote on it. You are welcome to use the wording that I have proposed on the slide.

The next motion that we are recommending that the council takes a look at -- I just noticed that Michelle put in the chat that the dates for Puerto Rico are incorrect. I apologize for that, Michelle, and I will try and get the correct dates from you for that and update this presentation and send it back to the council.

The next thing that we would like to recommend to the council, or suggest that you take a look at, is the FEP goals and sub-goals that the TAP has drafted, and we have sent this to the council previously, and we have not heard back if there were any comments or edits or revisions that you would like to make, and, if there are none, what we would like to suggest is that the council moves to approve and accept these goals for the Ecosystem-Based Fishery Management TAP's fishery ecosystem plan, and I will just quickly allow you guys to look at those while we discuss.

If the council so moves to bring this to a vote, or to a motion, they're welcome to use the information on this slide, again, to do so, and I would be happy, after the presentation, to discuss any

questions, revisions, or edits to these goals, prior to the council taking a look at these.

Last, but not least, as we are trying to get a lot of this data that can be used to understand the overall ecosystem trends, we will need to create some sort of sub-group that can work on both the logistics of creating a data repository, but also methods and procedures by which we maintain confidentiality, protect privacy, and understand how to use this data effectively in the repository without breaking any of the needs of our partners, their sharing the data with us.

As such, we would like for the council, or we suggest for the council, to direct the EBFM TAP to create a sub-group of the TAP to provide guidance on data management policies and data repository options, for the purpose of archiving the data used for the development of the FEP. We already have four EBFM TAP members who have indicated that they would be willing to sit on the sub-committee and a list of potential outside members that we would like to bring in as invited experts to help us develop both the procedures and the logistics of the repository. If there's time, we would love for the council to think about this motion and bring it to a vote.

With that, that's what we've been working on in the TAP, and, at this point, I will be happy to take any questions or concerns or put any of the suggested motions that we would like for the council to consider back up for review.

MARCOS HANKE: Thank you. Can anybody help me with the chat or the list or the participants?

MIGUEL ROLON: Marcos, you have a question by Tony Blanchard.

MARCOS HANKE: Tony, go ahead.

TONY BLANCHARD: Good morning, Mr. Habtes. I have a question as to which government agency would be contacted for information. Which local government agencies would that include?

SENNAI HABTES: Sure. At present, we've reached out to DEP in Puerto Rico, DPNR, Fish and Wildlife, and CZM, as well as all of the universities and institutions and agencies. We're also working with some people within NOAA Southeast Fisheries Science Center, and we would be happy to, if you can think of any other agencies, and I'm sure I'm missing a few, but, if there are ones that you know of that have information on long-term data collection, meaning things like abundance and distribution of organisms -- One of the

areas we're looking to try and bring in is the National Parks Service, and that's one of the ones we would like the council's support with, perhaps drafting a letter and seeing if we can create more collaboration with getting some of their data.

MARCOS HANKE: Anybody else?

MIGUEL ROLON: There is nobody else in the chat.

MARCOS HANKE: Okay. Sennai, you requested --

MIGUEL ROLON: Hold on a second, Marcos. You have one from Clay.

MARCOS HANKE: Clay, go ahead.

CLAY PORCH: Thank you. I am looking at the spaghetti diagram that Dr. Appeldoorn showed us, just getting at the complexity, and also at your presentation, which seems really ambitious, but the resources aren't equal to the task in the U.S. Caribbean, and so I wonder if you've given any thought to maybe carving -- Thinking about the fishery ecosystem plan, carving this up into some bite-sized chunks, where we identify some of the things that we think are the most important drivers and then focus our resources on that.

I mean, we're taking that approach, largely, in the Gulf of Mexico, just because the system is too complex, and we don't even have the resources there, and so we're focusing on things like red tide, or, in that case, one of the most abundant fish, forage fish, is menhaden, and so we have projects working on that, but the idea is to pick those things that everybody agrees that are likely important and channel our resources there, and hopefully come up with useful results, because we put enough resources to actually get a result there.

I wonder if there's been much thought about doing something like that in the Caribbean, because it's so complex. There are so many things that you could look at, and I could see us kind of treading water for a long time before we really make any progress.

SENNAI HABTES: Sure, and I would say I think that part of the purpose of doing the conceptual models with stakeholders is to identify exactly those important areas that we can focus. We're still in the planning stages, and so it's hard to really think that we can accomplish everything that is listed as ecosystem drivers, primarily because there are data limitations to what's available that we can understand.

I think those two factors are going to be driving the direction that we use to develop the FEP, and that, I believe, is exactly the purpose of the TAP, is to take all of that information into account, from the conceptual models and the stakeholder-driven process, as well as looking at the overall trends that are identifiable in the data that we're able to collect, through our partners with the Lenfest program, and use that to identify the areas that need to be the drivers for the FEP.

Of course, all of that is at the discretion of the council, and so, if they have sections that they direct us on to be focused on that are more important, we can obviously add those in, and we hope that this becomes an iterative process, meaning a management tool that can be used repeatedly to identify directions for more research or for more management needs, based on an ecosystems-based approach.

CLAY PORCH: Thank you.

MIGUEL ROLON: You have Jocelyn D'Ambrosio and Michelle Duval waiting for a turn to speak.

MARCOS HANKE: I recognize Jocelyn D'Ambrosio, and, after, Michelle Duval, but I need to make a comment before we end. Go ahead.

JOCELYN D'AMBROSIO: Thank you. One point that I wanted to make was about the potential for the sub-committee of the TAP and the potential recommendation for persons outside the TAP to be on that sub-committee. I would recommend against having persons outside the TAP on the sub-committee, because that could sort of bring us back into needing to make sure we're complying with the Federal Advisory Committee Act.

Under the Magnuson-Stevens Act, these committees of the council are exempt from that act, but, if we have people that are sort of outside the TAP, that might sort of run back into Federal Advisory Committee Act issues, and so you could have speakers come and offer input, or not necessarily input, but rather just have a presentation rather at a public meeting, but having them actually on the committee, on a sub-committee, might be a little bit confusing, and so, if we wanted to add them to the TAP and then have them as part of the sub-committee, that would be a potential process, but I just wanted to be careful about Federal Advisory Committee Act issues.

MIGUEL ROLON: To that, that was the comment that I was going to make. The TAP was created as a unit, eight members and that's it, and you work on it. Anything outside of that, we have to come

back to the council, and we are not going to add anybody to any sub-committee, because of FACA, and that's why we need to find -- I can talk later with Sennai about other possibilities to incorporate people for what they need for the discussion at the TAP, but what Jocelyn D'Ambrosio just said is really what we need to be guided for, or guided by, at this time.

MARCOS HANKE: Thank you, Miguel.

MIGUEL ROLON: Now you have Michelle Duval.

MICHELLE DUVAL: Thank you, Mr. Chairman. Just a quick comment, and so apologies to Sennai for you not having the correct dates for the Puerto Rico outreach meetings that we're doing, but those are May 25 for businesses and May 27 for NGOs, and I will also just quickly address a comment from Raimundo in the chat, and so those invitations go out one month in advance, and so today is the day that those invitations will go out, and be checking your email this afternoon, after I finish my presentation to the council. Thank you.

MARCOS HANKE: Go ahead, Kevin.

KEVIN MCCARTHY: Thank you, Marcos. Just circling back to the TAP and the sub-committee, so long as the committee can seek outside expertise for some guidance, I think we're fine. I'm thinking particularly when we're talking about databases and database construction and development, and that's some -- That's a very complicated business that requires a lot of expertise, and, having done some of that myself -- I haven't done the development, and I have consulted with experts.

I know that it's very complicated, and so, as long as there's a mechanism that we can receive guidance from experts, I think that's really important for the work of the committee, and so they don't need to be on a new sub-committee, as we're clearly not going to do, but some mechanism to get some outside guidance I think would be extremely helpful, and I think I heard from Jocelyn that there's a mechanism to do that.

MARCOS HANKE: Thank you very much, Kevin. Miguel, do we have anybody else in the chat, or can I make my question?

MIGUEL ROLON: No, but, after you talk, I have a comment.

MARCOS HANKE: Okay. Sennai, can you please put back the presentation with the blue table that you have that starts the activities?

SENNAI HABTES: Christina has it, and so I think she can put it up for us.

MARCOS HANKE: Sennai, I'm going to make a series of questions, and please write them down, about the blue table that you have there, and my opinion is that I am not ready for approval of the goals and objectives, the way you guys presented, and the reasons are that -- You stated there on the number -- Use the conceptual models and additional products to create island-specific risk assessment. Once you establish the risk, once you identify those risk assessments, which management implication will that have? That's number one.

MIGUEL ROLON: Marcos, time is a concern, and, number one, I don't think that you have time. You are already over time for this topic, and it's such an important topic that I believe that we should have time between here and the next meeting of the council, on July 21, and we can have -- Let's say, in the morning, we will have two hours dedicated to the five-year strategic plan, and, in the afternoon, we can have two hours to address all of this.

Graciela and I can meet with Dr. Sennai Habtes and then go over each one of them, because you cannot assess any of this without looking at the fishery management plan that you are working on, the draft that you have, and so we need to work this a little bit more, but I believe that we would like to thank the TAP, because this is exactly what we need to do. We need to revisit those goals and objectives and make sure that we don't confuse goals and objectives with other things. We can come back with a clear picture of what is needed from the council.

Regarding the data collection, we need also to ask the question today, or maybe on the 21st, of do we need to be the repository of that data, and what form do we need that data, and remember that you have to keep an eye on your goals and objectives under the Magnuson-Stevens Act that are really fishery related stuff, because, in the models, you have data -- If you accept the wording that you have here, you will need to ask NASA and all these people to tell us about the hurricanes and everything, and those are components that we have in the model, and, of course, nobody is thinking about that.

I believe that what the TAP is suggesting is to look for data that is germane to what we need to do and that is directed to what we need to do, but my suggestion is to allow the staff to work with the TAP and come back at the July meeting with these specific questions. However, one that we can address now is to see if you

agree with one motion about allowing the staff to send letters to institutions to see if we can have contact that can allow us to get the information that we need.

That doesn't mean that we are going to duplicate -- Then we can -- If we do that, we can start sending those letters. Christina, can you put the wording of the motion that Sennai presented regarding the letters?

SENNAI HABTES: It's Slide 4, Christina.

MARCOS HANKE: Miguel, as the Chairman, my intention was just to highlight a few things for the council members to think about and to consider, because, at the end of the day, it's important for the council members to participate and to have an opinion about it.

I want to just highlight the things that I think they should think about it, which is the risk assessment element on the indicators and the implication and what you're going to use the indicators for and the use of the CFMC process wording in there of develop an operational objective with concrete action items and how that will interfere with the way the council interacts with that, and, also, the management strategy that is used for the situation during the CFMC decision-making.

All of those implications are in there, and I think we need the council members to have an opportunity to really analyze this, and that's why I am not ready, personally, to approve it, the way it's written, because we need a better understanding, and that's all that I wanted to say. Thank you.

MIGUEL ROLON: No, that's perfectly all right, and that's why I am suggesting to do it at the July meeting and then do today what we can do today. Also, we will need a memo from you to all the council members of everything that you just said, and the council members should think about this presentation, and it will be, of course, on our webpage.

At this time, Mr. Chairman, our suggestion is this is an easy one, if it's allowed legally to do, which is to allow the staff, in coordination with the TAP, to send letters to other agencies and institutions within the U.S. Caribbean that can give us some information as to data that they collect, which are the contact persons that they have, and see how these agencies respond to us. Of course, Dr. Habtes indicated, in his answer, that they have an idea of these agencies.

In addition, the other two projects, Lenfest and the Pew Charitable Trusts, they are doing the same thing, and Dr. Michelle Duval has been working with them on that matter, and so, at this time, the question is if the council members agree with this language, with this motion, and, if you think it's agreeable, then let us know what the next steps should be for the TAP and the staff.

MARCOS HANKE: Any council member that would like to participate?

TONY BLANCHARD: I would like to make a motion to support this motion that is on the screen here, but I have a question as to -- Well, I shouldn't say a question, but I would like to make a comment as to how I think it should be done.

I think that the local agencies that should be contacted is the same local agencies that the DAP had requested to have made contact with, and that's the statement I would like to make, but I will support this request for the approval of the council to send letters to the other agencies and institutions.

MIGUEL ROLON: Tony, you are exactly right. I believe that we have on the record, and Graciela and I put it together, based on a request made by the DAPs in 2019, will be used by Dr. Habtes and the staff, and Graciela, to word this. If you agree with that, I can read, for the record, the motion, as written by Dr. Habtes and the group, and then we need a person to move to approve the language and a second, and then you can vote.

For the record, following Mr. Blanchard's statement, the language of the proposed motion will be: The EBFM TAP is requesting the approval of the council to send letters to other agencies -- **The motion will be for the council to approve sending letters to other agencies and institutions within the USVI and Puerto Rico that have collected data that may be useful in understanding overall trends in the ecosystem and inviting them to share the data with the EBFM TAP.**

TONY BLANCHARD: So moved.

MARCOS HANKE: So we have a proposed motion by Tony Blanchard. Any second?

CARLOS FARCHETTE: Second.

MARCOS HANKE: It was seconded by Carlos Farchette. Any opposition or any comments? Is there any discussion or comments? **Hearing none, any opposition? The motion carries.**

MIGUEL ROLON: Dr. Habtes, anything else that you would like the council to consider at this time, or can you wait until the July 21 meeting?

SENNAI HABTES: I think the rest can wait until the July meeting, but I would really appreciate if council members can take a look at the FEP goals and sub-goals and provide us with concrete feedback on things that they really feel either work or do not work or are within the purview of the TAP or not.

MIGUEL ROLON: Okay. Thank you, Dr. Habtes. I believe, Mr. Chairman, that Graciela and I will put together a communication to the council members, and it will be posted on our webpage. Just to remind everybody, these are the goals and objectives that we have so far, and these are the goals and objectives that we would like to propose for consideration at the July 21 meeting. Then you can move to the next agenda item.

MARCOS HANKE: Yes, we're going to move to the next agenda item, and I really invite the council members to read about this and submit their comments. Thank you, Miguel. The next item on the agenda is the Puerto Rico Port Sampling and Catch Validation Project.

PUERTO RICO PORT SAMPLING AND CATCH VALIDATION PROJECT

TODD GEDAMKE: Thank you, Marcos. There is a number of faces here that I haven't seen in a while, and so a hello to those that I know, and there are also some others here that I do not know.

MIGUEL ROLON: We don't know you. Can you identify yourself?

TODD GEDAMKE: I am working on it. My name is Todd Gedamke, and I am presenting on behalf of MER Consultants and for a project that we've been working on for the last about five or six years, and, for those that do know me, I have been given fifteen minutes to give a summary of this three-year report and touch on details of queen triggerfish, details of lobster, recommendations on species of interest, and planned next steps.

For those that know me, they know that I can't get a bad joke or tell one of my stories in fifteen minutes, and so I'm going to go really fast during this presentation. I have maintained figure numbers and table numbers that refer to the much more in-depth report on this whole thing, and I also wanted to just make two quick points outright at the beginning.

Trap fishers, I heard a bunch of the VI guys, and, at the end of

this, I would love your input on a couple of things, and we are also going to be looking for people to be working with us in Puerto Rico.

First of all, this has been a long group effort. It started in 2010 with data improvement meetings, and it really wouldn't have been possible without the team of people that you see on the screen right here, and it wouldn't have been possible without hundreds of people, but Steve Turner, Daniel Matos, Peter Freeman, Michelle Scharer, Marcos, and, anyway, I am going to miss a lot of people on this, and my role was just to guide everyone on the ground to accomplish this work.

In Puerto Rico, we dubbed this project Censo de Pesca, and we began working, in 2014, to try to figure out how to come up with a design for the U.S. Caribbean. Me and John Hoenig, in the bottom-left of the screen there, wandered all --

KEVIN MCCARTHY: Todd, sorry to interrupt, but, if you think you're presenting slides, we don't see them.

TODD GEDAMKE: Well, that would have been good.

KEVIN MCCARTHY: Well, I'm glad that we caught it early.

TODD GEDAMKE: Really, the only thing that's important -- I will just show you a couple of pictures from the beginning, just out of interest, and this is just a list, and there is so many people to thank for this that I want to make sure that we get everyone onboard, but, anyway, we started working on this in 2014.

Basically, it was just trying to get a handle on how to design an efficient port sampling program. We worked all over the USVI and Puerto Rico, and we developed training programs, and we started working in partnership with territorial agents all over the Caribbean. We developed reference materials, and we developed ID manuals.

We also developed an electronic reporting platform to work with this team, and we had these people -- I'm going to go back, but these people here trained for three days, and then we threw them into the field. We needed a way of making sure that we could validate their work entirely, and this reporting platform served very, very well.

We had the ability to evaluate data the evening that it was collected, and it was stored locally and uploaded and went online. We had fish identification ability on there, and we had the ability

to track individuals, to make sure that they were onsite. This is one location in one day, where you could see the sampler was there, and you got the times they were there.

In a previous presentation, I showed someone in Puerto Rico leave his location in Humacao and go visit his girlfriend in Caguas, and so we were very easily able to keep track of people as we went, and, most importantly, we were also able to keep track of the fish IDs.

We ran a pilot study in April and May of 2016 in Puerto Rico, with fifty-seven sites, to get an idea of the variance structure, and what I mean by variance structure is the relative use of sites. In St. Thomas and St. Croix, there's a limited number of sites, and it was easy for us to basically look at those and say, yes, these are high, but, if you look down in the north, our first guesses as to what were high-use locations and low-use locations was incorrect, and that's what pilot studies do. They allow you to arrange these in a way that you minimize the variability of your estimates.

The final product of that whole thing was to basically take a look at how much money is it going to cost to achieve the objective, and so, if you wanted to put 200 people out sampling, you could get a standard error of ten, and so, in other words, plus or minus 20 percent on whatever estimate you come up will result from this.

Given all this information, we basically were tasked with saying, okay, you now have it, and let's go into the field and study -- Let's get a full year of data for Puerto Rico. We started with some training programs, again, and we got good at this, and we started investing a little more time, and we started coming up with fishers contributing fish. This is an obvious need, doing fish ID.

We also did things like how and why to sub-sample. Yes, those are cool moves, and we played games like seven-year-olds, but the idea was to teach people that, if you've got a cooler of mixed-species fish, how do you go in there and get random and representative samples, and then I think one of the most challenging things to do is to figure out how to approach the captains and the vessels who are -- How do you get yelled at gracefully, and how to thank fishers and walk away, and so we try to keep all components of the training.

We went through the whole process, and we basically limited down to thirty-nine key sites in Puerto Rico, and we started on August 7 of 2017, eight samplers a day, from 9:00 to 5:00, and we had

forty sites initially, and then we added other samplers later on, but we started on August 7, 2017.

I am going to give you the results as we go along and feed them in, because, for those that are real familiar with the dates, we started our sampling, and then two events came in, which sort of changed everyone's life a whole lot.

For those that don't know, I sailed a boat down to do this project, and, once I was in that situation, I thought that I was not sticking around for Irma, and I've seen enough. We sailed south of Irma, and we got just south of it, and I do have a lesson for the fishermen in the crowd, not that anyone wants to do it, but the rack lines on the southern edge of a hurricane -- You can fish through for refrigerators, and it was phenomenal down there.

We got back, and I went to Florida for Irma 2, and I got back for a refresher training, of course, and then Maria kicked right in after that, and I never left the dock, but, luckily for me, that's my poor little boat, and I got the nickname Spider Man after this, and I somehow got through the hurricane, and now I know less about the ocean than I did before, and I'm very glad that all my friends made it through, and it was a very, very trying time for everyone.

We had to go take a new look at things, and we were not able to sample during the time period right after Maria, up until March 18, when you can see the levels of landings started to slowly recover, but, luckily, we had a full team of people ready to go on the ground during the recovery period. As soon as it was safe, we had people out spot-checking and doing site evaluations and doing damage assessments for DRNA.

This was pretty helpful in getting a bead on people, but it was also slightly overwhelming at times, looking at the communities that are busting their butt, and, in a lot of cases, a lot of the infrastructure had disappeared. We had a little bit of a camaraderie, and the team had a strong camaraderie with some of the communities, and all of our work -- In the reports that we have put out, we dedicate all of this work to the fishing and fishing communities of Puerto Rico.

For those that haven't seen the video on this, and there's a link to it in the report, and you'll have all these slides to take a look at later.

Since August of 2018, we have consistently been sampling these forty-one sites, and, once we get into sampling the sites, you don't need to have the details, and, once again, I am going to --

These slides will be up, but the point you're looking at here is the black are sites that we determined were high use, and the lighter color was lower-use sites. In January and March, in the beginning of that year, we were finding some sites that we thought were low, or maybe having less activity, but the key is, if you look at the south from the beginning and to the end, we basically had them all stacked up. We had a good understanding of how the site and effort had reallocated themselves following the hurricane.

Because we had the electronic reporting, we were able to look at this almost monthly, and we did pull the analyses every three months, to make sure that our design was appropriate for what we were looking for.

In March of 2018, we felt comfortable with what we were looking at, and the sites had recovered, or some sites had recovered, and so we began our daytime sampling again, and this whole thing is going to fill out as I talk. The dark lines with the arrows, the darker lines, are the estimates that came out of the study, and the reported data is this gray line.

You can see, in this time period, when we first started sampling, our estimates are generally below the values that are being reported by the fishermen during this time period, and this was not unexpected, because we were missing a lot of locations, and we started auxiliary sampling, which means we went out 5:00 a.m. to 9:00 a.m., and we went out from 5:00 p.m. to 9:00 p.m., and we began to sample Vieques and Culebra, and also on Sundays.

Vieques and Culebra, we sampled two to four times a month, and then we also, for Sundays and nights and evenings, we used a bus route, or roving sampling, design. This allows the sampler, say in the southwest coast, to visit Puerto Real and three locations, and, basically, during the course of the sampling, they would drive to these three sites and look at activity.

There are expansions that come out of this, which can be challenging, but this allowed us to get a good evaluation of those non-target areas, and so, once we add those in, we can just take a look at the sampling effort we did as a whole, and the sampling we did as a whole, where we accomplished almost 5,000 total, when you add in the auxiliary assignments completed during the whole year-and-a-half period.

During that period, those 4,700 trips, or 5,000, turned into a sampling close to 9,344 trips, and the sampling team actually had eyes, watched, 435,000 pounds come in, and so we expanded from

there, but I think it's important to note that the other thing that we learned throughout this whole thing is that, on the ballpark, a sampler is going to see two trips on an assignment, and the average trip weight is about forty pounds a day, across-the-board.

Now, this is a total summary of everything by region, the total estimated pounds here, the observed pounds here, and this is the number of sampled trips, and so, actually, 8,758 commercial trips in here, and then this big one at the end, which is number of unique species.

First of all, I want to point out, over here on our total estimated pounds, the reported, during this same time period, was about 2.7 million pounds, and so our estimates were surprisingly close to the reported landings data, and trust me. You will see that it doesn't mean that everything was a one-to-one match. We were really high on some, and low on others, but it just kind of happens that it was a one-to-one, but, most importantly, and of most use immediately from this research, is the number of species that we observed.

We documented 267 species, and the number of species reported during the same time period was seventy-six species. Yes, there is fifty or sixty aquarium banded arrow crabs and other things like that in here, but there's a larger number of species that we documented, as we all know, but we now have the ability, with some of this, to at least, at this point in time, break up some of those larger categories.

This just shows you the contributions of the different types of sampling that were done during the project, and so weekly estimates from daytime sampling are up in the 20,000 a week, or 30,000 a week, range. Everything else, morning bus routes, P.M. bus routes, and Sundays, came in with values that are in the thousands. This one blip right here, these four points for the A.M., is two king mackerel trips that were observed on the same morning and expanded out. It's called rare event, and it's easily filtered, but I just wanted to show that daytime is still driving the results that we came up with in this study.

We now added the auxiliary sampling into this, and we went in full-fledged, starting in about September of 2018, and you can see our estimates and the reported estimates more or less track themselves over the rest of the time period that we sampled. Now, I want to make a point here for the statisticians and the design people. I never ever, ever, in my life, thought that I would be presenting weekly estimates of landings from this type of study, because they

normally would be all over the place, really, really noisy.

I would have separated this by month, to smooth it out a little, but this pattern -- Here, we were lower, and we added the A.M. and P.M., and we jumped right back up in line with exactly what's being reported.

Now, like I said, I never would have thought weekly, but this I also found amazing. If you look at this pattern from reported and our estimates, and you start just looking at the peaks and the drops, there is a consistent drop in this location. This is where we did not have auxiliary sampling, but we started the auxiliary sampling here, and you had a rise, both reported and our estimates, and you got a drop coming, both reported and our estimates, and another drop, another rise, another drop, another rise, another drop.

These patterns are from two entirely different data sources, and one is the fishermen reporting their data, and the others are our observations at the dock. Is this lunar cycles? I can't prove it right now, because I just haven't had the time, and it doesn't match up exactly on the full moon, and, for those that have yelled at me that I have no idea what I'm talking about, about yellowtail snapper fishing and how important the currents are and the moon, hey, this is my objective, is to show science and actually pick some of these things out, and I really look forward to exploring this a lot more as another way of identifying covariates.

I am now going to get in and present a couple of things, and I heard the question asked of the Center and their next process, and I just want to be absolutely clear that this work was commissioned by NOAA and the Center. They are buried, and they have not had the opportunity to send this out yet, and so I am presenting on behalf of myself. This has not been determined to be the best available science.

The other thing, which I will repeat again in one second, is that we did not use official DRNA 2019 expansion factors. We did not have them, but I used 2018, for illustrative purposes.

Now, this is the same exact image that we just looked at, but I have put the expanded data for total pounds in these soft dots over the top. 2018, these, from here over, are official expansion factors that were used in 2018. From 2018 forward, we just simply used the expansion factors from the previous year, and so this data is not official in any way, shape, or form, but it does illustrate what I hope that everyone can obviously see, which is that, overall, the expanded values in here are higher than what

both we estimated and what is being reported by the fishery.

Now, I am not going to let that statement sit, and any fisherman in Puerto Rico, or any other fisherman that is listening, I want to make sure that you understand something in this case. Neither of these estimates are the truth. They are both estimates. The reported landings are taken by DRNA, and they estimated what percentage are reporting, and they multiply up to come up with expanded.

If you look at conch, here, the reported is at this level, and they expand up into this level here, and we are totally consistent with the reported conch landings, given the currently-used expansion factors. The dashes, or the shaded area, means standard error, and so, in other words, those expansion factors, over this time series, worked perfectly.

For Caribbean spiny lobster, we are a little lower, until we started doing our auxiliary sampling. Our standard error now starts overlapping lobster, and so, in other words, what we're saying here is that the expansion factor used by region are doing all right for queen and spiny, but I really want to stress that neither of these are true. Both are estimates, and no management should be done with one data stream. For the statisticians, or the fisheries people in the crowd, you can take a look at the bottom two plots on your own.

I am just going to skip through some of these images and give you an overview. If I spend a lot of time on here, I'm going to go forever, but, by region, in the north, our estimates were below, and then picked up, but basically kind of track and showed similar noisy patterns to what we would expect, but the important thing in the north is look at this axis.

This is 5,000 and 10,000. All the others are 20,000 and 10,000, and so north has a much lower overall landings. You go to the east, and we basically have the reported landings just below ours throughout, and so slightly underestimated, or ours are under those -- Excuse me. Our estimates are slightly higher than those estimated by the expanded landings.

In the south, it's pretty close, when you look at reported versus expanded, except for this right here. This is a rare-event species. This is two king mackerel trips, and it something that, as the data goes on for a few species, like tiger shark, like king mackerel, when you end up with a lot of pounds being landed in one trip, you can expand up for this, and the report shows exactly how to deal with this type of situation.

In the west coast, you can see that we estimate values that are a good bit less than what is being reported on the west coast, which, in any survey design, that is a red flag. You don't want to be under, and the expectation is that there will be underreporting, rather than people overreporting, but this is due to queen snapper and silk snapper, which I will touch on in one second.

Again, I'm not going to go through the whole table, but this is the species composition from 90 percent of the landings. The only thing that I really want you to notice is lobster and conch makes up 53 percent of all of the landings that we observed, and so this is a lobster and conch-driven fishery, as we all knew.

If you take a look at this next table, it adds a little more information. Once again, lobster and conch were the top 50 percent, and you can see here that, during our day, we estimated 671, and we end up with 740,000 as our total combined estimate, and the reported landings are 703,000. Conch, our total estimate is 575,000 pounds, and the reported is 500,000 pounds, and so these are very, very close.

If you look at king mackerel, and I put this in to show you that the numbers tell us this might be questionable. During the daytime, we had 21,000 pounds, and our auxiliary estimate -- Once again, this is two trips of about 800 pounds, and it is much farther off than the reported landings, and it shown in our proportional standard error right here.

For those with the knowledge, this is all here, and you can look down to see how accurate our estimates are here, and I want to point out a couple other things. Octopus common, we got 54,000 pounds estimated, and there is no reported octopus common. It's all reported as octopus. Queen triggerfish is the one that Graciela and the council wanted me to look at, and 50,000 pounds, and there is 88,000 pounds reported, and we had 50,000 pounds. There is only one species of trigger, and we found five species of trigger.

Also, just out of curiosity, this is real data, and 10,000 pounds, or 11,000 pounds, of Spanish slipper lobster were landed during the course of the year, and Spanish slipper lobsters ranked twenty-seventh in landings in Puerto Rico.

I'm just going to flip through a couple of these images, so you get a feel for by species. We've looked at the lobster, and we've looked a little bit at the conch. King mackerel, you can see here, once again, that's our spike, and you can see this one alone, and

this is also, driving a little bit of an overestimate.

Dolphin, on the other hand, you can see that we're capturing dolphin, and this is a pattern that would show from a stratified random design. On some days, we end up with higher estimates. On other days, we end up with lower estimates. Overall, over the year, our estimate is pretty close.

Octopus, I just showed you that, for common, we caught a lot, and none were reported. I can't even see the species with that blocking me. Queen triggerfish. Our estimates, once again, are a little lower than reported, most likely due to species. Mutton snapper, we tracked it almost dead-on. Yellowtail snapper, as expected, we didn't track it that well. Can you guys still my slides?

MARCOS HANKE: Yes, Todd. Thank you. We are really tight on time. Can you please --

TODD GEDAMKE: I'm almost done.

MARCOS HANKE: Okay. Thank you.

TODD GEDAMKE: You got it, and so I'll show you the octopus. Silk snapper, we had some differences. If you look at hogfish, it's right on. Red hind is right on. This, I will skip over. For the statisticians, please use this, but the bottom line with this plot is, the more landings you have, by the bubble size, you end up with more precision, and we have less of a clue when you start looking up at tiger shark and striped mojarra.

I touched on the species reporting questions. The groupers, all of them tracked very, very well. Why? They're basically driven by red hind. Triggerfish, once again, it tracks very, very well, all of them, but we got ocean triggerfish, and we had gray triggerfish landed, 100 to 200 pounds a week, and the queen is up in the thousands, and durgon, and so we found multiple species, and that's going to have to be addressed. The same thing with parrotfish. It tracked very, very well, and multiple species are tracked on there.

The last thing, or the last two things here, and then I will be done in three minutes, but recommendations on species of interest. This work really is not going to give you a good clear -- There's a lot of work that has to be done with the species before you're going to get species of interest for this assessment, and so I have one recommendation, and that is use existing work.

I saw Virginia is on this call, and I think Virginia and Hoenig's work should be used as a point to make these decisions right now, and they went into the fisheries and looked at maturity, and the bottom line for queen triggerfish -- This had the lowest percentage of mature fish in the catch, 86.4 percent mature, but these other species, these six, had almost 95 percent of the population that they sampled in the catch at full maturity, and, theoretically, it's impossible to crash these stocks, given those results with the same selectivity. So, the next species of interest, focus on stuff that has auxiliary research like this.

For our planned next steps on this thing, we're following up, currently, on deepwater snapper, yellowtail, silk snapper, and Vieques. We are following up on a rapid sampling project, which some have seen before, and have the ability to put fish on a scale. It will weigh in and photograph it and automatically measure it, and we are working on species ID for this.

Why? I have measured tons of fish in the USVI, and you have to sort the fish, and you then have to put it on a scale, and you then have to measure it. You should not be handling or touching a fish more than one time.

It leads to Chub busting his butt, and other people walking around writing notes down, and it happens everywhere in the world that I have done this, but I have also done enough port sampling, and you need one person and the right equipment to get this thing done.

This system was developed in the USVI by me and Peter Freeman, and he worked with J.P. on marine spatial planning over there, and we worked directly with the fishermen, and we tested at Hull Bay. The program currently gets annotated for length, and it uses spectral analysis, and it suggests fish, right here, and we'll get automated length. We've even got the computer artificial intelligence working to give hot spots right here, and so Cornell Ornithology Lab will be onboard on this very, very soon. Write down "Merlin app", and they can ID pictures of birds in trees, and also birds from their sound, and we've got them running our analytics on this program.

Lastly, we are repeating a cooperative selectivity study as we go. Nicky helped, and I saw Cindy sign on. Cindy, I hope you're well. She ran this project, and we are doing the same thing, because the last assessment of lobster raised questions about the selectivity curve. Is it dome-shaped, which means it looks like this, or it is flat-topped, and the difference here will determine the amount of lobsters that are on the bottom for the health of the population.

Trap fishermen, I am going to stick on. If there's a lunch break, and they will let me do it, I want your input on this, but we are designing a trap to catch bigger lobsters, but less overall, and we're designing catch of the typical size, and we're designing one to catch more of the small ones, and so COVID times has made it challenging, but we're currently in the process of building.

We have a standard design with a ten-inch opening, six-inch drop, and a four-inch drop-down for the opening. Trap fishers, a quick discussion on three options for this and how you catch big fish would be fantastic. Thank you very much for giving me the little extra time. I tried my best, but you guys all know that I am very long-winded, and, for those also that are in Puerto Rico, or have friends maybe looking for work, we are going to be hiring team leaders, samplers, and analysts over the next two months, and so please spread the word, and thank you very much for the opportunity. This is exciting, exciting, exciting to me, and we're making huge steps in progress, and so thank you.

MARCOS HANKE: Thank you, Todd. Unfortunately, we don't have the opportunity for much more details, but, for sure, it's a lot of very important data. Nelson, very quick. One minute.

NELSON CRESPO: Hi, everyone. That's very specific information, and that has convinced me that we have to put on the ground the port samplers again, to validate all of that information, and we have to have them in the field, definitely. Thanks.

MARCOS HANKE: Thank you, Nelson. Julian, the same. One minute, please. Thank you.

JULIAN MAGRAS: I still have the same issue like I had before. It clearly shows, with the data that was presented, they are off by big numbers. Where we say small numbers, 100,000 pounds difference, with the actual hands-on, from the way this project was done is a big difference. That can drive my fishery into accountability measures, and I will continue to repeat that the only way to get proper information, which is needed for the SEDAR process, is to measure each fish.

Right now, our Fish and Wildlife has four people that are measuring the fish, where it used to be done by one individual working alongside the fishermen. In St. Thomas/St. John and Puerto Rico, you can get the job done and collect way more accurate information, and I do not believe in taking pictures to come up with length and weight. I believe that you take each fish, and you weigh them, and you measure them, and you get the correct information that is

needed, and that's my comment.

MARCOS HANKE: Thank you for your comment, and I cannot keep going on with the back-and-forth on the presentation. Miguel, go ahead.

MIGUEL ROLON: We don't need to do any of that, but we will ask Dr. Gedamke if the report will be available sometime this year.

TODD GEDAMKE: I'm not sure if that's directed at me. The report, and I can send a link, is available now, with the same disclaimer that the Southeast Fisheries Science Center has not had the opportunity to vet it. I don't think they have any major concerns, but, legally, someone else independently has to review it.

I want to say that -- It's critical, Marcos, and give me fifteen seconds. Julian said this could take us into accountability. I made the strict point that neither are the truth, and what we're doing is collecting a separate set of information. If our information shows there is an eleven-inch ruler to measure a fish, that fish is eleven inches. The accountability measures and everything would all have to be adjusted, given new ways of estimating landings, and so, Julian, no, I don't -- There is no direct line from new research to accountability measures on this.

The ACL, as the way of calculating sustainability, would also have to change, and the other thing I just want to say is that the idea of using pictures -- The length of each individual fish is captured, but I want everyone to be absolutely clear that there is no way that I said, yes, this is the amount of fish we estimated, and someone says, well, that's true and you go into accountability measures. The Center has a lot of work, and the territorial, to figure out exactly how to apply and use this stuff. Thank you.

MARCOS HANKE: Thank you for the clarification. We are very aware of all of that, and let's keep moving to the next presentation. Thank you very much, Todd, for your excellent presentation. The next presentation -- Before I will move on, I will ask if there is anybody on the group that has a problem to cut the lunchtime to half-an-hour, because of our agenda. I was trying to speed up the most I can, and is there any opposition to that?

MIGUEL ROLON: What you're saying is to go to 1:00 and then have a half-an-hour lunch and come back at 1:30? Is that what you're talking about?

MARCOS HANKE: Yes, Miguel. Let's keep moving to the next item on the agenda, please, which is Presentation on Regional Electronic Technologies Plan.

PRESENTATION ON REGIONAL ELECTRONIC TECHNOLOGIES PLAN: 2020-2024

JESSICA STEPHEN: Thank you. Today, I just wanted to bring to your attention that the Southeast is working on a regional electronic technologies implementation plan. I have worked together with folks from the Science Center to put this plan together, and what we're going to show you now is just a brief presentation over the highlights of it, and then shortly, in a few weeks, I think you'll be getting the actual plan and have the ability to comment on it.

I wanted to go over a little bit of the history of the electronic technology plans. We began our first plan framework in 2013, and then we actually began the first plans within 2015, and these were finalized in January of 2015, and we used biannual updates through 2017.

In 2019, there were -- Consultations were initiated that had looking at how the plans were being used and how to compare them across regions, and a new plan goal was set for 2020. This goes along with the electronic technologies fishery-dependent data collection policy that was put forward, and the main intention of the new plans was to make the plans comparable among the different regions and to have status reviews annually done by leadership.

Unfortunately, with the pandemic, our intention of getting the plans done in 2020 got pushed back, and the new plans are now due in 2021. Our current status is that we have a draft document of it that is nearing finalization.

The new electronic technologies plan was to establish kind of a regional vision for electronic reporting, which we refer to as ER, and then electronic monitoring, which is EM, and to forecast what the region intended to do for the next five years, and so that's going through -- It was originally through 2024, and I need to make an update on the slide that, with the pushback from the pandemic, we're now going to make these plans viable through 2025.

Inside of the plans was the vision for developing, integrating, and implementing various different types of ET programs across the different councils, and so the plan does include regional priorities, as designated by NOAA Fisheries, and we're also going to be looking for past council actions and future council actions in the research and development. We will be coming back to the councils to get their input as well on what they feel the priorities -- Particularly if they differ from what the regional priorities are.

The purpose of these plans was to help prioritize the internal and external funding for electronic technologies within NOAA, and that's made a little bit easier by the comparison and the similar type of plan across regions. It was to highlight areas where integration efforts and coordination and standardization might increase the ability of ER or EM to function and then identify what the challenges were implementing electronic technologies and identify, as well as the costs and any funding transition plans. Finally, kind of go over a status of the review.

For the plan, and I know I've mentioned that now it's 2020 to 2025, our general vision for the Southeast Region as a whole is to align our electronic technologies with the regional strategic priorities, to identify and quantify the costs of electronic technologies, and this includes such things as infrastructure, cloud servers, staffing, and software, and hopefully to continue to expand electronic reporting within the region.

We're also looking to develop processes to review the electronic reporting programs we have to-date and their progress, looking at things such as the lessons learned and potential areas of cost savings. Another area we're working in is a concept of one-stop reporting with the Greater Atlantic Region and the states up along the Atlantic coastline and that is that, if someone has to report to multiple NOAA regions, and/or states, hopefully that they can report once, instead of multiple times, and that one report gets to all needed parties.

Then the last concept was to look over our data governance plan and form a data governance committee. The data governance would look at how we manage our data, how the data work flows, who has access to it, and hopefully streamline the ability to share data with our partners moving forward.

Continuing on with where we are currently with electronic reporting, we are looking to continue the for-hire reportings that both the Atlantic and the Gulf of Mexico are working in. We want to streamline and approve this process and the data connectivity, and we're hoping some of the information and lessons learned from this region would also apply to the other regions, as we're moving forward.

We're also looking at our commercial electronic reporting in the South Atlantic, to move wreckfish logbooks over to our coastal logbooks, and potentially move wreckfish into a catch share program electronic online system, and, in the Gulf, we're looking at our commercial electronic logbook system that is currently out of date,

and we're looking to have a replacement system that's more modernized.

Overall, as a whole, within the region, we are also looking at updating our permits and our catch share systems. Both are currently in the middle of modernization processes, and we're hoping to move into cloud services, and so, when we're impacted by hurricanes, these systems can continue to run.

Along the lines of electronic monitoring, which, again, is the video aspect of electronic technologies, we're looking to coordinate with Mote Marine Lab for a lot of their electronic monitoring information. They are considered a center of expertise now, and we're working with them through various other grants, such as through the National Fish and Wildlife Foundation or the Bycatch Reduction Engineering Program.

Another aspect that applies, particularly to this council, is we're looking at the rapid sampling in the Caribbean, and I believe you guys just had quite a bit of a presentation on that, and so we're hoping to continue that as a high priority moving forward. In general, kind of the idea here, again, is using the fish under the cameras and using artificial intelligence to help identify the species and the size.

I think this is my final slide, and I just wanted to give you an overall idea of what the current ongoing initiatives are. There again, it's the for-hire reporting in both the Gulf of Mexico and South Atlantic, the catch share programs in both, again, the Gulf of Mexico and the South Atlantic, modernization of our permit system, moving our commercial logbooks electronic, moving the Gulf shrimp commercial logbooks electronic and modernizing them, and then to finalize the rapid sampling of the EM project here in the Caribbean.

Here, I would be happy to take any questions that you have about this electronic technologies plan as a whole, and keep in mind that you will have an opportunity to comment on it, and we will be doing annual updates to it, and, on the annual updates, we'll be coordinating with you earlier in the process, to get your information and thoughts put into that annual update, and that will be generally between February and March of each year.

MARCOS HANKE: Thank you for your presentation, Jessica. Do you need anything from the council, because we are very tight on time, and, if you don't mind, we can ask them to put the questions over the chat and interact with you.

JESSICA STEPHEN: That is fine. I don't need any feedback directly right now. If you guys can get some comments later to us, that would be helpful.

MARCOS HANKE: Okay. Thank you very much for a great presentation. Thank you. The next presentation is Evaluation of Marine Reserves in the U.S. Caribbean by Diana Beltran.

EVALUATION OF MARINE RESERVES IN THE U.S. CARIBBEAN

DIANA BELTRAN: Hello, everybody. I am Diana Beltran, and today we will talk about the U.S. Caribbean marine managed areas literature review that I made for seven focus areas in Puerto Rico and the U.S. Caribbean.

Today, I will present the summary of the literature review of the seven of the U.S. marine managed areas, some generalities, studies carried out, gaps and recommendations of each of them. Then I will move to a general view of the U.S. Caribbean MPAs, including those in territorial waters and others. I will present one of the analyses, taking into consideration the new global initiative that, by 2030, that we have 30 percent of the ocean preserved.

Under these visions, I want to show you what is the current status of the U.S. Caribbean marine protected areas and the IUCN categories, how much of the U.S. Caribbean waters is currently an MPA or MMA, and how we can improve that situation that we have, and, after all this, I will give you a general recommendation that I suggest.

First, you can see the seven focus areas that are Bajo de Sico, Tourmaline Bank, and Abrir la Sierra that are located in the U.S. part of Puerto Rico. The other ones are Hind Bank Marine Conservation District and Grammanik Bank that are south of St. Thomas, and then we can also have, here on the right side, the Mutton Snapper Spawning Aggregation and the Red Hind Spawning.

Here, we have the same seven areas, and most of them are seasonal closures, and you have here the dates that the closures are in that area, and we have one of them that is a year-round closure, and so we will start to do some explaining one-by-one.

Here, we have Abrir la Sierra in the table on the right side of my slide, and you have a table that shows how many studies we found, and remember that these are scientific studies that were made in the last ten years in each of those areas. This is Abrir la Sierra, and it's a seasonal fishing closure area, and it was established in 1996.

The principal location of that area was protecting a hind spawning aggregation, and so most of the work that I collected in that area came from one study that was made by Garcia in 2013 and seven more that are using acoustic or telemetric methodologies, and the gaps and recommendations that we have for that area is that the last and the only benthic and reef fish surveys were done in 2013, and so we will need a new survey to know the current state or status and to know if the closure is helping to recover the hind population.

The other thing that I found is it was very difficult to get the information for fisheries-independent surveys, because it's not available for the layperson in Puerto Rico, and it's very difficult to find that, and so it probably is a good option to do one of those studies again, because it's important, and another thing that is very -- We can promote studies to quantify the density of the other commercially-important reef fish species that are using that area as a spawning aggregation site.

Also, we want to encourage and support more acoustic studies to understand fish home ranges and connectivity with the nearby marine managed areas, and this will allow us to know if the size of the area is adequate for managing that population, and I know that most of the acoustic studies there were working only on the red hind, and so we can also explore if there are other species that are using that area.

The next one is Tourmaline Bank, and this is a seasonal fishing closure area also, and it was established in 1993, and the Tourmaline Bank, as you see here in this map, partially coincides with the Puerto Rico marine reserve of Tourmaline, and so that gives a little more information, scientific information, because this is a point that we can find information from the Puerto Rico Coral Reef Monitoring Program, and so we have there some data that came, every two or three years, from that program, and that helps to understand more the status of that reserve.

As you can see here, we can see what are the areas that the monitoring program and other studies are being -- Were taken there, and so most of them, the areas that the lab is sampling, are in the end of the platform, and that area was also established to protect the red hind, the Epinephelus guttatus. It's important to know if other commercially-important reef fish species are using Tourmaline Bank as a spawning aggregation site.

I recommend also to know more information about the fishery-independent surveys, because the information was not available,

and so it's important to know what happened there, and I also recommend to carry out passive acoustic telemetric and acoustic receiver array along Tourmaline, to track the movement of the snappers and groupers that are using that area. Garcia et al., in 2003, they suggested that probably some other species, aside from red hind, are using that area as a place for a spawning aggregation.

We continue with Bajo de Sico, and so Bajo de Sico is a seasonal closure that was established in 1996. It also was created to protect the red hind, the Epinephelus guttatus, and, here, we have more variety of the work that was doing acoustic studies with other species, like the black grouper and the Nassau grouper.

The last and only benthic and reef fish surveys in that area were done in 2007 by Garcia, and so it's important to improve and update that information, to understand those habitats that are important for the spawning aggregation species. The same, like before, we don't have -- Probably we have it, but we didn't have available the data from independent surveys, and so maybe we have to have that data available for everyone that wants to analyze and understand the status of the populations.

I think that the continued passive acoustic telemetric and acoustic receiver arrays, to track the movement of snappers and groupers within this area is very important, and, also, I think that methodology helps to understand a lot of the behavior of the species, not only what is using the area, but, also, we can understand what is the perfect timing when those aggregations are starting or happening.

Then we move to Grammanik Bank, and so Grammanik Bank is a seasonal closure, and it was established in 2005. I think this has been the most studied area in the Caribbean, in the U.S. Caribbean, and we have a lot of information here, and we have very, very detailed information, and so, here, we can give more specific recommendations for improving the area, because of the quality of the data that we have available.

In this area, the species are recorded during the spawning aggregation, species like yellowfin grouper, Nassau grouper, dog snapper, cubera snapper, and Bermuda chub. As you can see here, we have here the Grammanik Bank, and we have this small area, and we have up here the Red Hind Marine Conservation District. In this area, we can see what is the points of the studies that we find there. Most of this area is the area of the spawning aggregation.

As I said before, we have a lot of information there, and very good information, and so we can see, for example, in this graphic, that the number of Nassau groupers through the time is increasing, and so that means that the protection of that area is working, and so the species that are there are protected in the spawning aggregation area, and they need the opportunity to continue and increase and do the fertilization and increase growing the population.

Also, another thing that is important here is that, for example, in this area, we can see one study from Nemeth in 2007, and he tagged some fishes from the spawning aggregation, and then those fishes were recaptured in those areas here, where you see this plot, the gray squares, and so that means that the animals that are there have the ability to move and move and share with another marine protected area or marine managed area.

One of the recommendations of several studies that were made there is that it's important to increase the size of that reserve, and, also, if we cannot increase the size of the reserve, we can create a corridor to give the opportunity to the animals to move and share between spaces and between marine protected areas and be less endangered for the fishing pressure.

Another thing that they found there is that they may arrive earlier than the timing of the spawning aggregation, and they may stay longer, and so probably we have also to extend the closure of that area, to give the opportunity to protect all these animals that came and to do their aggregation there.

We are moving to the Red Hind Marine Conservation District, and this is a year-round no-take zone, and it was created in 1999, and so it was initially -- It was established to protect red hind and tiger grouper. This marine managed area is allowing the red hind population to increase, and so we have that area from 1999. In the first studies, when they evaluated, the increasing, or the improvement, of the population of the red hind was more or less in 2004 and 2005, and, in that moment, they already understand that the population was increasing. That means that that area was doing a very good job for that species that we are protecting.

After that, we don't have any other studies to estimate the current population of the red hind there, and so it's important to do something new in that area. Here, we have the points that most of the studies are sampling.

We are moving to Lang Bank, and that is a seasonal closure that was established in 1993. The principal objective of that area was

to protect the red hind, also. In that area, we don't have too much of a variety of studies, and most of the information that we have came from the territorial Coral Reef Monitoring Program from the U.S. Virgin Islands, because they have a sampling point there.

Another thing that is important there is that Kadison, in 2017, found that the species that -- They found lower predatory fish density in St. Croix than in the northern Virgin Islands, and we already have a lack of current or new fishery-independent surveys, and this is important to have this information, to evaluate what is the status of the population.

Then we are moving to the Mutton Snapper Spawning Area, and this is a seasonal closure, and it was established in 1993, and the principal objective of that area was to protect the mutton snapper, Lutjanus analis. Here, we have the map of the area and the points that the -- I think the only independent study that has taken place there.

In 2011, they went to the area and tried to find the spawning aggregation by diving, but they never found the spawning aggregation, and so what they ended up doing was a fishery-independent analysis to understand what was the situation with the mutton snapper. The result of that study showed that the mutton snapper is important in that area, because of the capture of the species was bigger, and it was significant, and so they considered that this is an area where the species join to the spawning aggregation, but, unfortunately, they didn't find the correct place where the spawning occurs.

Here, we can recommend alternative methods are needed to find the primary spawning site. We can do, for example, acoustic telemetry with acoustic receivers and arrays along the mutton snapper spawning area. Also, in other study, Kadison, in 2017, found lower predatory fish densities in St. Croix than in the northern Virgin Islands, and so they found that they have -- In the northern Virgin Islands, the species have a bigger size comparing to the St. Croix.

Also, we have here a lack of current and new fishery-independent surveys, or catch per unit effort studies, and so this is another thing that we can do to improve the knowledge of that area.

After that, here I show you a summary of the scientific studies that we found in the last ten years in those areas. Most of the marine managed areas that are located in the U.S. Virgin Islands have a lot of information that came from the territorial coral reef monitoring program. In Puerto Rico, we don't have the same case. We have only Tourmaline as a point in the Puerto Rico Coral

Reef Monitoring Program, and we have a few established in the other ones, and so it's necessary to improve and support more research in those areas, to have actual information and to compare this information with the last studies.

Here, we have the summary of the species that are reported for the marine management areas, and so, as I said before, the Grammanik Bank has a lot of information, and so there are several researchers working there in different species and in different methodologies, and so we see here the difference in the absence of -- When you compare the Grammanik or the areas.

Here, we are moving to the summary of those areas, and we are moving to see one of the evaluations that I did with the marine protected areas in the U.S. Virgin Islands and Puerto Rico compared with the number of --

For doing this analysis, I took the information from three different databases, and so one is coming from the WDPA that is developed by the IUCN, and the other ones came from the MPA inventory that comes from NOAA, and another one is a comprehensive inventory of protected areas and other land conservation mechanisms in Puerto Rico that was developed by the Department of Agriculture Forest Service International Institute of Tropical Forestry.

The idea here is that most of the agencies are trying to update all of the databases, and so I have to use three, because most of them have the different marine protected areas in their databases, and so I want to complete and join all the information.

The first thing that they want to do, the global initiative wants to do, is the necessity to standardize worldwide classification of the marine protected areas, and so we are following the definition of the IUCN in 2008 as to marine protected areas. It's a protected area that has a clearly defined geographical space, recognized, dedicated and management, through legal or other effective means, to achieve the long term conservation of nature with associate ecosystem service and cultural values.

Under the IUCN, for example, all the temporal or permanent fishing closures that are established primarily to help build up and maintain the reserve stocks for fishing in the future and don't have wider conservation aims or achievements are not considered to be marine protected areas. This is why, in the following slides, the marine management areas are not in any of the categorization of the IUCN.

As I said before, we need to standardize worldwide classification, and we have some areas that are very, very restricted no-take areas, and those areas are called MPAs, and we have other ones that have wider regulations that have less restrictions, and so, in the conservation means, the healthiest oceans and benefits to the people needs to be in that direction, the high protection of the areas.

Here, we have a different table that shows us the different categorization for the IUCN categories, and so we have -- The Ia, that means the most protective zone, and that's a no-take zone, and we are moving down to areas that are less protected.

MIGUEL ROLON: Diana, you have five more minutes.

DIANA BELTRAN: Okay. We have here the areas, the different marine protected areas in Puerto Rico and the U.S. Caribbean, with the management areas, and so, in the color here, we have the representation of the eleven of the categorization of the IUCN, and so, if you see, most of the areas right now are in the Category IV. That means that that category has a condition that the area probably needs to have active intervention for the requirements of particular species to maintain habitats, or, for example, needs to have more enforcement to provide all the commitments.

How much of the U.S. Caribbean Economic Exclusive Zone is protected? Here, we have, in the map, all the areas represented, and, here, we have the percentage of the protected areas that are in the whole U.S. Caribbean, and so that means only 2.02 percent will have protection in all the EEZ. How much of those areas are no-take zone, or are in the extreme part of the full protection? We have less than 1 percent in that area.

If we are moving to how much of those we have in the U.S. Virgin Islands, we have, including territorial waters and outside of the territorial waters, we have the total percentage of the protected areas in the territorial waters are 27.68 percent. If we want to know how many of those areas are no-take zones in the territorial waters, and that means into the three nautical miles, it's 11.20. How much of those are no-take outside of the three nautical miles, we have only 0.15.

How much of those areas are in Puerto Rico? We have, in the total area of Puerto Rico, we have thirty-seven areas, and that means that the 28.46 percent are protected. In the territorial waters, and that means into the nine nautical miles, we have only 0.94 percent, and, in the Exclusive Zone, we have 0.03 percent.

In the territorial waters, we are close to -- You know that we have, right now, a global initiative that wants to have 30 percent of the ocean protected by 2030, and so we are -- If we are looking at only the territorial waters, we are close to that goal, and we are about 27 percent, but, in the EEZ, considering how we can improve that, we can consider the year-round closures of the sections of the marine management areas, so they can become MPAs.

We can consider increasing size in the area that the studies suggest that they should increase, for example Grammanik Bank and the Marine Conservation District. Also, we can consider increasing the area of no-take in existing MPAs or MMAs, and so some areas are too small for protecting the fish home ranges. Also, we can improve revising all management plans and developing new ones in areas that we don't have any management plan.

Here, I have some of the recommendations, bigger recommendations, and most of them I already said, but something that I wanted to talk about is that the acoustic -- For example, we can, or we need, to -- We can develop a monitoring program with the acoustic tagging and telemetric. That methodology helps a lot to understand what is the home range and the situation of the spawning aggregation.

Also, in the area that we don't have information, we need to implement monitoring of permanent transects that will allow us to estimate changes through time and the current state of the benthic communities. Another thing that we will have is a stock assessment for some of the species that are already protected from the areas.

We can use also another type of new technology that, right now, are more easy to acquire and are cheaper, and so that helps a lot to doing a lot of the patrolling or doing the surveys right now.

Another thing is that is important also was getting the information, and so, for example, I think the design needs to be open, so that most of the information of the data that came from the studies gets to be available, so the other people can analyze and use for the next types of research.

Another thing that I found that is in the initial phase to designate those areas is they don't think too much about the connectivity, and so this is very important in the marine realm, and so we need to think of those management protected areas, marine managed areas, as a connection, as a network, and so we have to do and move with some research to help to understand how those species are connected in those areas.

We can use, for example, genetics, and we can use physical models,

and we can use acoustic tagging, and we can use also microchemistry of otoliths, or we can dye the otoliths also, to understand what is the movement of the fish and what are the areas that those fish are using.

MARCOS HANKE: Diana, we are really short on time. Can you please start to wrap it up? Thank you.

DIANA BELTRAN: Yes. This is another thing that I have to say, is maybe to understand that the productivity is an important issue, and we can form a committee, or a taskforce, to understand that situation and join with the territories to begin the coordination of activities in the various protected areas and design strategies that incorporate coordination of these management areas. Thank you very much.

MARCOS HANKE: Thank you, Diana. Go ahead, Miguel.

MIGUEL ROLON: With the time that we have, we don't have time to go over the whole thing, but I believe that, first, I would like to thank Dr. Diana Beltran. This is an excellent, excellent report, and I'm looking forward to her final report to us. We are going to distribute the report, and it will go up on our webpage for everybody to see, but now the next step will be for staff to sit down and look at all this information and prioritize the information.

Then I believe that we should go back -- Once the island-based FMPs are implemented, we should go back with each one of those recommendations she has and present the recommendations to the DAPs of St. Thomas/St. John, St. Croix, and Puerto Rico, because I need to thank the group from St. Thomas/St. John, because this is an initiative that they started, Tony and Julian and Ruth. They all were asking me what's going on inside those areas, and so this is the first step, and I believe that Dr. Beltran has indicated to us the path to follow in any of these areas that we have.

Of course, there's a lot of work here and a lot of consideration, even legal, because we don't follow IUCN. We follow MSA, but this information also is very helpful for Section (a) of 14008 that we are going to discuss this afternoon at 3:00. Of course, we are going to discuss the Executive Order 14008, Section 216(c), which is the one that deals with fisheries, but also Section (a), dealing with the closed areas that she was mentioning, the Thirty-by-Thirty nickname, at this time.

Probably by August, Mr. Chairman, we will be able to give you some ideas of what the staff is looking at with Dr. Beltran's report

and what the next step will be. If the island-based plans are implemented this year, then we will start immediately to work on some of the issues, modifications, et cetera, that we need to do to make sure that we focus on each one of the areas, St. Thomas/St. John, St. Croix, et cetera, the issues that we need to address to modify the island-based FMPs and to implement some of the recommendations that we have seen today.

MARCOS HANKE: Thank you, Miguel. Any comments or any questions? Please send them via the chat to Dr. Diana Beltran, and you guys can interact with her. Let's go for the next presentation, Island-Based Fishery Management.

ISLAND-BASED FISHERY MANAGEMENT PLANS PROPOSED RULE STATUS

MARIA LOPEZ: Hi. Good afternoon, everybody. This is Maria Lopez, and I just have a quick update from the island-based FMPs. At this time, I really don't have any new information regarding the implementation of the plans, as to when they are going to be effective, other than that we're making really good progress with the review of the very extensive proposed rule that reorganizes the Caribbean regulations by FMP. We hope that we will be able to provide more information at the August meeting, and that's all I have, Mr. Chair.

MARCOS HANKE: Thank you, Maria, for a very short participation, and precise. Modification of the Buoy Gear, please.

MODIFICATION TO THE BUOY GEAR DEFINITION FOR THE HARVEST OF MANAGED REEF FISH, DRAFT GEAR AMENDMENT I TO THE IBFMPs

MARIA LOPEZ: Okay, and so this is me as well. Christina, I sent you a presentation, if you can put it on, please. Thank you very much. I am going to be presenting on an amendment, a draft amendment, that staff is working, as requested by the council, to modify the buoy gear definition for the harvest of managed reef fish in federal waters of Puerto Rico, St. Thomas/St. John, and St. Croix.

What I'm going to be presenting today is going to be basically a summary of the Draft Amendment 1, the first version of the draft, that is included in your briefing book. Last time that we heard about this topic was at the December meeting, when we presented an options paper with, obviously, the potential options of how to deal with this, and so that transformed into a draft amendment that we're still working on, but I wanted to give you an overview.

The issue that is being dealt with in this amendment is the type

of buoy gear that is used to fish commercially for deepwater fish, and, when I refer to deepwater fish in this presentation, it's going to be snappers and certain groupers in Puerto Rico and in the U.S. Virgin Islands, does not conform to federal regulations, and I added in the name, the local name, in Puerto Rico, and that is cala con boya, and, in the USVI, it's deep-drop buoy gear.

Although this local-use commercial fishing gear type is very similar to the buoy gear that is defined in federal regulations applicable to Caribbean Fisheries, it differs in the number of hooks that are allowed to be used with the gear, as we discussed in previous meetings.

Buoy gear is defined in federal regulations at 50 CFR 622.2 as a gear that cannot -- I'm sorry. One of the parts of the definition of the buoy gear that is defined in the federal regulations is that it cannot contain more than ten hooks connected between the buoy and the terminal end, and I am just pointing this out because this is the part of the definition that the gear configuration that is used in the U.S. Caribbean does not conform to. The definition of the buoy gear, as it is in the regulations, is included at the end of this presentation, in case you want to revise it.

State regulations for Puerto Rico and the U.S. Virgin Islands, with respect to the number of hooks that can be used with this gear, they do not specify the number of hooks, and there is also no definition for this gear in Puerto Rico or the USVI regulations.

Although this gear configuration is used in both federal and state waters of each one of the island management area, and it's most used in Puerto Rico and less used in the U.S. Virgin Islands, it is not clear how much harvest occurs using gear containing more than ten hooks between the buoy and the terminal end in federal waters, and so Caribbean fishers have indicated that they would like to increase the number of hooks that are allowed under the legal definition of buoy gear for federal waters.

Then this also refers to what we have discussed before, with respect to this action. The use of any gear not listed as authorized for the fishery is prohibited, and this is the use of any gear not listed is prohibited for its use in federal waters, and so authorized gear types for the commercial harvest of reef fish in the island-based FMPs includes automatic reel, bandit gear, buoy gear, handline, longline, rod-and-reel, trap, pot, and spear.

A gear type configuration that has more than ten hooks between the buoy and the terminal end does not meet the legal definition of

buoy gear in federal regulations, and it is not considered an authorized buoy gear, and so this gear does not meet the definition of any other hook-and-line gear authorized, and so what this means is that the gear cannot be used by those fishing commercially for reef fish managed under the island-based FMPs unless that gear type is added as an allowable gear type under the island-based FMPs or the definition of buoy gear is amended to include this gear type.

Also, as you have heard before, the federal regulations set forward the process for a person seeking to use a gear not authorized for a particular fishery to notify the appropriate council of the intent to use that gear and to obtain permission to do so.

In this amendment, with that said, the council then proposes to modify the definition of buoy gear included in 50 CFR 622.2, which is the federal regulations, as it applies to those persons that are fishing commercially for managed reef fish to address the use of additional hooks preferred by some participants of each of the Puerto Rico and USVI commercial reef fish fisheries harvesting deepwater reef fish.

I am going to stop here a moment, before continuing with the discussion of what is included as an action in the amendment, because we need to address an area that's very important for continuing the development of this amendment, and that is the description of the Puerto Rico and the USVI fisheries, in terms of the deepwater reef fish component.

The information that I have listed in here is a summary of some of the information that we have included in the Chapter 3, which includes the description of the fishery, and this information comes from interviews with deepwater fishers, from DNER staff, from testimony at past council meetings, and also from some publications, like the socioeconomic study of the hook-and-line fishery in the Commonwealth of Puerto Rico, among others.

What I would like to ask of any of the deepwater fishers and other people that are knowledgeable about this fishery is, if you see anything in here that is not correct, or needs more context or more clarification, to please let me know, because this is very important so that we can capture a good description of the fisheries that are occurring in our waters.

As I mentioned earlier, the local name in Puerto Rico is cala con boya, and the species targeted with this local buoy gear type are silk, blackfin, black, vermilion, and wenchman, and these are caught in shallower waters, from forty to a hundred fathoms, and

then it's also used, and mostly used, to harvest species in deeper waters, from 170 to 230 fathoms, such as for species that are included in the Snapper Complex Number 2, queen and cardinal snapper, and also misty grouper and yellowedge grouper, and also to capture big silk snappers in those deeper waters as well.

Some of the bycatch species that we should have mention are caught using this gear include the glasseye snapper, the Atlantic scombrids, or cartucho prieto, and the dogfish. The hooks that are used are circle hooks and are related to fishing effort, depth fished, previous experiences with lost gear, among others.

In terms of the number of hooks, species that belong to the Snapper Complex 1, which are the ones that are deepwater species, but still shallower than the Snapper Unit 2 species, they're typically fished with less hooks, and that is like from five to ten hooks, and then, for those species that are harvested in deeper waters, they are fished with more hooks, sometimes up to a maximum of thirty.

From the information that I recall hearing from many of the fishers, most of the harvest of these species that are from deeper waters, in Puerto Rican waters, occurs with that local buoy gear, and, also, this is a very specialized fishery. The average number of set lines used is three, but, obviously, that can vary. The bait used in little tunny, sardines, bonito, and bacora, and the west coast and the east coast are important landing areas for these species.

Now, another particularity of this fishery is that, in Puerto Rico, state waters has a special permit for cardinal and queen snappers that has been in place since 2013, and it has consistently had around sixty participants that are allowed to participate in this fishery. It is estimated that approximately 200 fishermen use this gear in Puerto Rico to fish for all of those species that I mentioned before. The market is restaurants and villa pesqueras, and then the price per pound fluctuates between $7.50 and $8.50.

Other things that were mentioned is that the number of hooks used is adjusted to balance the potential for that maximum productivity, and the factors that affect the gear used are strong current, swells, high predation potential, weather, area fished, and experience, for example, and that fishing occurs only for a few hours, and this gear is very expensive, and so fishers do try to save some gear, and some have noticed that there is no need to use that many hooks to obtain the desired landings.

They also noted that this gear acts as a spring that lifts the weight and moves the line to another place, by using the current

and the weight. The gear bounces on the bottom, and it doesn't drag, and it's very important for the fishers to not lose their gear, and so they don't want it to snag.

This is just a snapshot of harvest that occurs, and, in the landings data, it's classified as bottom line, or bottom hook-and-line, and this is not cala con boya, and this also includes other -- It includes cala con boya, which is the type of buoy gear configuration, but it also includes other bottom line configurations that are used to fish for deepwater species, for example, and so with the reels attached to the boat, et cetera.

This snapshot that I am presenting here is just to give you an idea, and it's just for the three species that have some of the most landings with this gear. I just did this data current, and so this is not final, and so it needs to be corroborated, but this is just to give you an idea of the harvest that may be occurring in federal waters, Puerto Rico waters, and also what is classified as unknown, which means that no information was provided as to where that harvest took place.

If you see the graph on the left, this is cardinal snapper, and the blue is the percentage of landings that occur in state waters, and the orange is the percentage of landings that occur in federal waters, and the gray line, which in 2012 is pretty high, is unknown, meaning that it was not specified, and so, as you can see, for cardinal snapper, most of the landings occurred in state waters, or occur in state waters, and another thing that we can see is, in 2019, we do have an increase in percentage of landings from federal waters, but we also know that, through time, that information that has been listed as unknown has diminished.

In terms of queen snapper, we can see that the percentage of landings from federal waters is a little higher, and we also see that the unknown, listing of unknown, gets better through time. Lastly, for the silk snapper, we have also state waters having a higher number of landings, in terms of percentage, although, at the end, it's kind of comparable with the unknown.

This gives us an idea of how much harvest occurs in federal waters, which is what we're trying to accomplish in here with this action, but we don't really know how much of the harvest reported occurs in the specific type of buoy gear configuration that contains more than ten hooks between the buoy and the terminal end, and so this is some kind of information that we would like to have more refined, if possible, so we can include it in this amendment.

Now I'm going to turn my attention to the USVI fisheries deepwater

reef fish component, and there is even less information available for the deepwater reef fish component, and it's probably because it's not a fishery that is conducted a lot in the U.S. Virgin Islands, and so the local name is deep-drop buoy gear, and, again, as I mentioned earlier, and I'm sorry for the interruption, but, if you see anything that you can provide more context, or needs to be corrected, please let me know, and we will be happy to do that, and we need your input on this.

The species targeted are almost the same as in Puerto Rico, the queen snapper, blackfin snapper, black snapper, vermilion, the goldeye or glasseye snapper, and misty grouper. The deep-drop buoy gear is used from 300 to 1,200 feet, and fishing with this gear type is more common in St. Croix than in St. Thomas and St. John, and I forgot to mention, but this information comes from a couple of publications, and so, for example, the USVI fish census from Kojis 2004 and then Kojis et al. 2017, and also from another publication from Olsen in 1974, as well as recent personal communications with USVI fishers and fisher administrators by NOAA Fisheries staff.

The number of hooks used varies, but fishers mentioned an average of twenty-two. It can be up to fifty, and I have an asterisk in there, because I think this is some of the information that still needs to be corroborated. Some fishermen may use up to six buoy lines, and some use just one line, and, as in Puerto Rico, the number of hooks is also related to the fishing effort, the depth, the species targeted, the areas fished, and previous experiences with lost gear or the cost of buoy gear, et cetera.

The bait used in the U.S. Virgin Islands is little tunny, squid, and small skipjack. The species that are harvested using this gear are sold in the local marketplace, usually on Saturdays, and the price per pound usually fluctuates -- I'm sorry. Usually, it's around $8.00.

Other names for this buoy type that we found in the publications is vertical set lines, or vertical longlines, and there seems to be some confusion between the buoy vertical lines that are used to fish for pelagic species and the buoy vertical set lines that are used to fish for deepwater snappers and groupers, and so this is definitely some of the information that we still have to gather.

When we tried to create similar charts as the ones that are presented for Puerto Rico, we found that these species are harvested with all the gears that are listed in there, but then we don't really know which one of these gear types that vertical set line, or the deep-drop buoy gear, falls under, and then, also, for

the purposes of creating charts and tables, there is also the confidentiality issues, because of the low number of participants.

In terms of the USVI, we definitely need more information, and this amendment will benefit greatly from having a little bit more information from the USVI to complete the description of this fishery.

I am circling back to the action proposed in the amendment, after we talked about the description of the fisheries, and so every amendment has a draft purpose and need, or a purpose and need, and, in here, the purpose is to modify that definition of buoy gear that is included and to allow the commercial sector of the longline hook-and-line component of the fishery for managed reef fish described in each of the island-based FMPs to use a larger number of hooks when using buoy gear.

The need is to ensure that commercial fishermen fishing in federal waters of Puerto Rico and the U.S. Virgin Islands for managed reef fish can use the gear type preferred by some fishers with those additional hooks.

The alternatives that are proposed in the amendment is the -- This is only a one-action amendment, and a different alternative can be selected for each island management area, and I'm just saying this, but, obviously, this only has two, but the Alternative 1 is the one that we always include as the no action. The current definition of buoy gear specified in 50 CFR 622.2 would be retained.

Then Alternative 2 will modify the definition of buoy gear as it applies to the commercial sector of the fishery for managed reef fish to allow the use of up to twenty-five hooks connected between the buoy and the terminal end.

What this Alternative 1 means, it means that nothing changes, right, and that definition remains unchanged, but one of the specific requirements under this definition is that that buoy gear cannot contain more than ten hooks connected between the buoy and the terminal end, and so, in those components of each of the island-based FMP fisheries where buoy gear is an authorized gear, which means the commercial sector harvesting managed reef fish is the only one from the council-managed fisheries where this gear is authorized, but fishers then must limit the gear to those ten hooks.

Under Alternative 2, then this modification will increase the number of hooks allowed to be used to up to twenty-five, instead

of the ten, and then that will allow those fishers that are fishing commercially in federal waters for those managed reef fish to legally use that gear configuration that is employed in some state and, to some degree, federal waters.

That modification would only apply to those using this gear to fish commercially for managed reef fish, and the rest of the specifications that are included in the definition of buoy gear, the federal definition, such as the weight and the construction materials for the drop line and the length of the drop line, will remain unchanged.

Now, in the amendment, in this draft amendment, we included some preliminary effects analysis, but this analysis, at this point, because we're still gathering some data and trying to clarify some things about the data, and also some more information that will help us better describe the fisheries, but this analysis that is included in the draft amendment is qualitative.

The way that it was done, and, at this point, I'm not going to get into a lot of details about it, but it's assuming that changes in the total -- That there will be changes in total landings of target species because of those changes in the total number of hooks used per trip, and now some of the questions that perhaps are appropriate for the council, and for fishers, is would increasing that number of allowable hooks per set affect -- Would it have any effect on the total fishing pressure and potential for additional catch and landings or additional bycatch?

There is a couple of things in here that are unknown, because harvest reported is -- You saw that there were some ways of distinguishing some of that harvest between federal and state waters, but harvest reported is combined, usually, between state and federal waters, and we don't really know the number of fishers, and that may be possibly increase the hook numbers.

Also, harvest levels may already be counting harvest with more than ten hooks, and so the IPT, which is the interdisciplinary planning team that is working on this action, will try to complete -- I'm sorry. We will complete, for the next draft, an effects analysis that hopefully can include more information that would help us answer some of these questions.

This is my last slide, and these are some of the next steps that we are recommending. We would like to obtain some input from the district advisory panels to complete the description of the fisheries, as I mentioned earlier, and so we want to ask the council if they think it's appropriate to task the DAPs to gather

that information from fishers and to report their findings to staff.

Then the interdisciplinary planning team, or IPT, would analyze the data and available information and finalize the effects and other sections of this document, and the IPT is going to draft the second version of the amendment and present that to the council at the August meeting for potential final action, and so this is the end of my presentation. If you have -- If there is time for questions or for further clarification of some of the items that I presented, please let me know.

MARCOS HANKE: Thank you, Maria.

MIGUEL ROLON: I have Nelson Crespo.

MARCOS HANKE: I am going to give an opportunity for Nelson, and, obviously, he is the expert among the fishermen on that, and please make sure that you put all your comments, even if it's a little detail, in the chat, and we are going to be informing you which way we can organize the future participation from the DAP and others to support Maria's effort. Nelson.

NELSON CRESPO: Thank you, Maria. Excellent presentation. I know all the time that you put on that, and we appreciate that. I took the time to read the presentation, and the second paragraph that says that increasing the number of hooks may increase the fishing pressure, at present, the deepwater fishermen are using more than ten hooks, as we always have long before the Magnuson law was created.

I mean, we are not going to increase the pressure on fishing, and Alternative 2 would cause the fishermen who still use more than twenty-five hooks to have to reduce the number, and, consequently, reduce the pressure of fishing. Also, at the present, we are only -- By local regulation, we are only allowed to fish 120 days per year for deepwater snapper, and an increase of fishing days beyond that is not possible. Thank you.

MARCOS HANKE: Thank you, Nelson, and make sure, everybody, to put your comments -- Like, in Puerto Rico, I think you are missing the use of squid as bait, and that's very, very commonly used around Puerto Rico, too. The next presentation is the Modification of the Spiny Lobster.

MARIA LOPEZ: Marcos, if I may, real quick, I think Carlos has a comment, Carlos Farchette.

MARCOS HANKE: Carlos, go ahead.

CARLOS FARCHETTE: Real quick, thank you, Maria. On page 8, I believe it is, I was reading Alternative 2, around the fifth sentence, where it says: "Under existing regulations of those fishing for managed reef fish in federal waters, only those fishing commercially can use buoy gear."

Is this language in the CFR, because I know that, on St. Croix, are waters are very deep in territorial waters, and some fishers may fish for that species in territorial waters, but I don't think that gear is prohibited by recreational users.

MARIA LOPEZ: Mr. Chair, if I may.

MARCOS HANKE: Yes, go ahead.

MARIA LOPEZ: The federal regulations of the buoy gear, as it's listed in federal regulations, is not just for managed species by the council, but it's also an authorized gear, and remember that I'm referring to federal waters here. It's also an authorized gear for other non-managed fisheries. For example, it's called non-FMP pelagics, et cetera, and it is not -- For federal waters, it is not listed as an allowable gear for recreational use.

I do not know the particularities of the regulations in the USVI for this gear, and my understanding, based on me reading the gears that could be used by recreational, is that it wasn't listed for recreational use, but, if you, or somebody else from the USVI, can clarify that, will be great, but I can only speak as to what is allowed in federal waters.

The reason that we're being very specific in the alternative, as to what this will be modifying, is because this change is only meant to be for those council-managed reef fish. Anything else that this gear type is an allowable gear for will remain at the ten hooks, and so that's why, in the alternative, it says for managed reef fish, and I hope that answers your question, Carlos.

CARLOS FARCHETTE: Yes.

MARCOS HANKE: Thank you, Maria. We really need to pass to the next presentation, and thank you for everybody's cooperation. Go ahead, Miguel.

MIGUEL ROLON: Marcos, before you rush into the next presentation, you people have to really understand Maria's presentation and also decide whether this is only for the management unit or it will be

across-the-board for anybody who fishes those gears in the federal waters. You don't have to say that now, but you have to think about it, because, otherwise, you will be dragging this issue forever, and that's what Maria is trying to explain here.

In one public hearing in Mayaguez, there was a recreational fisher who used jigging, and he explained to us what jigging was, and he was concerned that jigging would be prohibited in Bajo de Sico and others, and so those issues are still pending, and the council members are encouraged to look at it and come to us with recommendations or suggestions, because, once this is approved, although this will go through the process of going through public meetings and everything, and public hearings, of course, but we want to make sure that the council, as a group, understands what Maria just presented to us.

MARIA LOPEZ: Marcos, if I may.

MARCOS HANKE: Yes, go ahead.

MARIA LOPEZ: One of the things that I am requesting in this presentation is for the council to -- If they would like to request the district advisory panels to provide information, to collect information for this, and I don't know if that's something that the council would like to do at this time.

MIGUEL ROLON: Marcos, if I may.

MARCOS HANKE: Go ahead, Miguel.

MIGUEL ROLON: We can ask the members of the council, and we have to be careful not to call it a survey, but we can ask -- Maria and Graciela and I can put together some information that we need from the DAPs, and we can send emails to each one of them, through the chairs especially, Nelson and Eddie and Julian, and see if they can contribute the information that Maria is needing to collect, and we can do that between here and the next meeting, and so, if you all agree, and I need to have your consent, so we can go ahead and ask the DAPs about the information that she needs.

MARCOS HANKE: I think the council would agree. Any opposition to the idea? Hearing none, let's do that, Miguel, and move forward.

MIGUEL ROLON: Okay. Graciela and Maria will get together some time in the near future, and, for the next meeting, we hope to have the information from the DAP members. Thank you.

ANDY STRELCHECK: Marcos, I don't know if the council wants to

wait for the information from the DAPs, but, kind of given timing and proceeding with public hearings and final action, if the council is ready to select a preferred alternative today, that would be, obviously, helpful for the development of the document.

MARCOS HANKE: Well, I think, from my part, as the Chairman and being involved in this discussion for a long time, I think the preferred alternative, for sure, would be Number 2.

MIGUEL ROLON: Marcos, if I may, we need to put that on the screen, and we need a motion for that.

MARCOS HANKE: Yes, I understand. Is there anybody that can help me out with a motion, if you agree with Alternative 2 to be the alternative that --

MIGUEL ROLON: Marcos, we need to put that on the screen first. Let the staff put it on the screen. Christina, will you please share the screen with the alternative?

CHRISTINA OLAN: Yes.

MARCOS HANKE: Thank you.

MIGUEL ROLON: Mr. Chairman, here we are, and the language is Alternative 2, modify the definition of buoy gear in 50 CFR 622.2 as it applies to the commercial sector of the longline/hook-and-line component of the fishery for managed reef fish to allow the use of up to twenty-five hooks connected between the buoy and the terminal end, and that will be your motion.

MARCOS HANKE: Yes.

MIGUEL ROLON: That alternative language.

MARCOS HANKE: Is there any second for my motion to accept the Alternative 2?

MIGUEL ROLON: No, no, no. Marcos, we need to have the motion. You cannot make the motion.

CARLOS FARCHETTE: I move to accept Alternative 2 as written on the screen, modify the definition of buoy gear in 50 CFR 622.2 as it applies to the commercial sector of the longline/hook-and-line component of the fishery for managed reef fish to allow the use of up to twenty-five hooks connected between the buoy and the terminal end.

MARCOS HANKE: Thank you, Carlos. Any second?

TONY BLANCHARD: Second.

MARCOS HANKE: Thank you, Tony, for the second. **Any opposition to the motion?** Any comments? **Hearing none, the motion carries.** Thank you to all. Now I think we are on the way to the next presentation of the spiny lobster. I am little concerned with the time constraint. Miguel, do you have any recommendation on how we accommodate, or should we keep going with the next presentation?

MIGUEL ROLON: You can break now, at 1:00, and have the presentation at 1:30, and then you will -- But you have to break at 3:00, sharp. For example, the DAP reports can be done tomorrow, first thing in the morning, after 8:30. We have the 8:30 presentation by Dr. Michelle Duval, and then you can move the presentation by the DAPs after that.

MARCOS HANKE: I think that sounds like a plan.

MIGUEL ROLON: You can break for lunch now, and the spiny lobster reference points is very important.

MARCOS HANKE: Yes. Let's break for lunch now and come back -- It's 12:53, and we will come back at --

MIGUEL ROLON: 1:30, sharp.

MARCOS HANKE: Okay. 1:30. No opposition. At 1:30, sharp.

(Whereupon, the meeting recessed for lunch on April 27, 2021.)

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APRIL 27, 2021

TUESDAY AFTERNOON SESSION

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The Caribbean Fishery Management Council reconvened via webinar on Tuesday afternoon, April 27, 2021, and was called to order at 1:00 o'clock p.m. by Chairman Marcos Hanke.

MARCOS HANKE: Good afternoon, everyone. This is Marcos Hanke. We're going to restart the afternoon session for the 173rd CFMC Meeting. The next presentation, and thank you so much to Sarah for waiting to present after lunch, with the modifications that we

made on the sequence of presentations, and go ahead, Sarah, with the Modification of the Spiny Lobster Reference Points.

MODIFICATION OF SPINY LOBSTER REFERENCE POINTS BASED ON SOUTHEAST DATA, ASSESSMENT, AND REVIEW (SEDAR) 57 STOCK ASSESSMENT, DRAFT AMENDMENT REVISIONS

SARAH STEPHENSON: Thank you. Good afternoon, everyone. I'm Sarah Stephenson, for the record. This presentation will provide a summary on the draft framework amendment to update management reference points for spiny lobster, following the accepted SEDAR 57 stock assessment.

At the December council meeting, the council was presented with a first look at the draft amendment to update spiny lobster management reference points following SEDAR 57 and the stock's change from a Tier 4 to Tier 3 under the ABC Control Rule that is included in the island-based FMPs.

The council reviewed the two actions and the alternatives that were included in the amendment. Under Action 1, the council would select a preferred approach for setting OFLs, ABCs, and ACLs for 2021 to 2023, and the two approaches included a variable catch approach, in which the OFLs, ABCs, and ACLs would change each year, and a constant catch approach, in which the values would be the same each year. Then, under Action 2, the council could revise the AM trigger for spiny lobster, which selects the year, or years, of landings to be compared to the ACL.

After reviewing the draft amendment, the council requested that the Science Center update the OFL projections and ABC estimates for Puerto Rico using complete 2019 landings data adjusted using the 2019 expansion factors. At that time, the 2019 landings were available, but the expansion factors were not.

The council also requested that the SSC review components of the draft amendment that were related to the timing of the OFLs and ABCs, specifically the shelf life of those values. The council also requested guidance from the SSC on the use of an arithmetic average, versus a geometric average, used in the process to trigger accountability measures.

The interdisciplinary planning team for the spiny lobster amendment would make any necessary updates to the actions and alternatives, following outcomes from the February SSC meeting, and would add in a high-level comparison of alternatives for council consideration, and that was for this meeting.

During the February SSC meeting, the updated OFLs and ABCs for Puerto Rico were not available at that time, and so the SSC agreed to allow the Chair the ability to approve the updated projections and estimates for Puerto Rico for recommendation to the council when they became available.

Specific to Action 1 in the amendment, the SSC discussed the years for which OFLs and ABCs should be included in the spiny lobster amendment, as well as the council's intent to request an interim assessment by 2022 to update those values to reflect more recent data. The SSC decided to continue to recommend both the variable catch and constant catch OFLs and ABCs for the period of 2021 to 2023.

In the event that subsequent rulemaking with new OFLs, ABCs, and ACLs that are updated from that interim assessment is not in place by the end of 2023, the SSC recommends that the OFL and ABC for 2024 and later be equal to the OFL and ABC set for 2023 under the variable catch approach. This would apply for both the constant catch and the variable catch approaches, and, since the ACLs are derived from the ABCs, it would apply to the constant catch and variable catch ACLs as well.

Specific to Action 2, in which the SSC was asked for guidance on the type of average use for ACL monitoring, the SSC recommended that, for spiny lobster, the council continue using an arithmetic mean for ACL monitoring purposes.

Here's a quick look at major changes to the draft amendment since the December meeting, which will be discussed in more detail in the following slides. The OFLs, ABCs, and ACLs for Puerto Rico were updated using complete 2019 landings data with 2019 expansion factors, and the OFLs, ABCs, and ACLs for 2024 and later we set based on SSC recommendation from their February meeting.

The alternative in Action 2 that ramped up to a three-year average, meaning it started with a single year of landings, followed by a two-year average of landings, and then a three-year average of landings as the AM trigger, was replaced with an alternative that just uses a three-year average of landings as the trigger. In other words, no ramp-up. The sub-alternatives using the geometric averages were removed based on SSC recommendation.

A high-level comparison of the alternatives was added for each action, including effects to the physical, biological, ecological, economic, social, and administrative environments. Chapter 3, which is the description of the environments affected by the actions, was added, incorporating, by reference, information from

the island-based FMPs, where applicable, and then, finally, references and appendices were added to the draft amendment.

Version 2 of the draft amendment is included in the council's briefing book, which is on the council's website and is available for your review.

For each action, the draft amendment includes a no action alternative that provides a baseline for comparison of the considered alternatives. Under Alternative 1 of Action 1, if the council were to take no action, the OFL proxy, which in the island-based FMPs was the SYL, the sustainable yield level, under Tier 4 of the ABC Control Rule, the ABC and the ACL specified for spiny lobster would remain as set in the island-based FMPs, which are listed here in this table.

However, Alternative 1 would be inconsistent with the requirements of the Magnuson-Stevens Act and National Standard 2 Guidelines, in that they would not be based on the best scientific information available, and the ACLs would be higher than the ABCs recommended by the SSC following the SEDAR 57 assessment.

The other two alternatives under Action 1 allow the council to select its preferred approach for setting reference points under this amendment. Under Alternative 2, the council would select the variable catch approach and use the variable catch ABCs to derive the variable catch ACLs for spiny lobster. Under Alternative 3, the council would select the constant catch approach and use the constant catch ABC to derive the constant catch ACL for spiny lobster.

The top table has the OFLs and the ABCs under the variable catch approach, and the bottom table has the OFLs and ABCs for the constant catch approach, and I will point out that the values here in these tables for St. Thomas/St. John and St. Croix are the same that you saw in December, and only the Puerto Rico values have been updated.

You can see that, for either approach, the values for 2024 and later are the same. Those values were recommended by the SSC at their February meeting, in the event that subsequent rulemaking with updated reference points is not in place by 2024.

Alternatives 2 and 3 each include three sub-alternatives that would allow the council to set the ACL from the ABC, based on the level of management uncertainty perceived for the fisheries targeting spiny lobster, and management uncertainty refers to uncertainty in the ability of managers to constrain catch so that ACL is not

exceeded and the uncertainty in quantifying the true catch amounts.

This table lists the proposed sub-alternatives for setting the variable catch ACLs from the variable catch ABCs. Under Sub-Alternative 2a, which is the third column in the table, no management uncertainty buffer would be applied, and so the ACLs would equal the ABC. Under Sub-Alternative 2b, which is the fourth column, that would apply a 5 percent management uncertainty buffer, and the ACLs would be equal to 95 percent of the ABC. Then, finally, Sub-Alternative 2c, which is the last column, would apply a 10 percent management uncertainty buffer, and the ACLs would be 90 percent of the ABC.

Just to point out here what the plus sign is on the year 2023, since the ACLs are derived from the ABCs recommended by the SSC, the ACLs for 2024 and later would be equal to the values specified for 2023, and so the values set for 2023 would continue in time, until amended. Again, the council intent is to ask the Science Center to conduct an interim assessment for spiny lobster for each island from which a subsequent amendment would be developed with, at minimum, updated OFLs, ABCs, and ACLs. The hope is to have the rule updating those values in place by the 2024 fishing season.

These are the proposed ACLs under the constant catch alternative, which is Alternative 3. The reduction buffers, the management uncertainty buffers, proposed here are the same as those under the previous alternative. Sub-Alternative 3a, which is third column, would have no management uncertainty, and it would set the ACLs equal to the ABC. Sub-Alternative 3b, the fourth column, would apply the 5 percent management uncertainty buffer, and Sub-Alternative 3c, which is the last column, would apply that 10 percent management uncertainty buffer.

Under this alternative, the ACLs for 2024 and later would be set equal to the value specified for 2023 under the variable catch approach. Again, those values were based on the SSC's recommendation for ABCs for the years after 2023. The values for 2024 and later are just based on the SSC recommendation for ABCs, and those would continue until amended, and then just to point out that the council could select a different alternative and sub-alternative for each island or island group.

The higher ACLs under Alternative 1 could offer greater economic benefits. However, those higher ACLs could result in reduced biological benefits to the stock, through the greater risk of overfishing, based on SEDAR 57 outcomes. Increased biological and ecological benefits would be expected under Alternatives 2 and 3, when compared to Alternative 1, through the application of the

best scientific information available. Managing based on best scientific information better ensures the spiny lobster stocks are harvested sustainably.

Although the approaches for setting OFLs, ABCs, and ACLs differ under Alternatives 2 and 3, the total catch allowed under the variable catch approach, which is Alternative 2, would equal the total catch under the constant catch approach, which is Alternative 3, and so the long-term biological benefits to the stock would be the same.

Setting constant management reference points under Alternative 3 could provide greater benefits to the socioeconomic environment, when compared to the changing reference points under Alternative 2, since the catch targets would not be changing from year to year.

The table shows the total catch allowed under the two approaches for the sub-alternatives that use a 5 percent reduction buffer. When you compare the variable ACLs to the constant ACLs, the catch allowed in a given year differs, but the total sum over the four years shown here would be the same for each island, and that's the bold numbers at the bottom, and this outcome occurs for the other sub-alternatives as well as for the OFLs and the ABCs.

For Action 1, the council would want to consider if they prefer changing ACLs over the 2021 to 2023 period or static ACLs and what level of uncertainty they have in the management of the stock.

Under Action 2, the council could revise the trigger for accountability measures for spiny lobster from what was described in the island-based FMPs. Alternative 1 is the no action alternative, and it would use landings from a specific sequence of years to evaluate an overage of the spiny lobster ACL.

This ramp-up process would start with a single year of landings from 2018, followed by a single year of landings from 2019, and then a two-year average of landings from 2019 and 2020, followed by a three-year average of landings from 2019, 2020, and 2021, and then, thereafter, a progressive, running three-year average. Under this step-wise process, the no action alternative will not use a three-year average of landings as the trigger until the fourth year of implementation.

Alternative 2 would use the average of the most recent three years of spiny lobster landings to trigger an AM. An AM would be triggered if average landings exceeded the average ACLs in place during those years. The years of landings used to trigger an AM could be adjusted to account for the best scientific information

available.

Alternative 3 would use the most recent single year of spiny lobster landings to trigger an AM, and an AM would be triggered if landings exceeded the ACL in place during that year. The year of landings used to trigger an AM, again, could be adjusted to account for the best scientific information available.

This table was included in the draft amendment to help illustrate the years of spiny lobster landings that would be used to trigger an AM under each alternative. This analysis was based on two assumptions. The first assumption was that final landings are not available until two years after the year in which the fishing occurred, and the second assumption is that that island-based FMPs and the spiny lobster amendment would be effective in the same year, and, in this table, that's Fishing Year 2022, and that the years specified in the FMPs as the AM trigger would be updated to reflect the most recent landings available.

In this table, if the FMPs and amendment were implemented in 2022, the most recent landings available at that time would be from 2020, and the sequence specified in the FMPs would be updated to use 2020 as a starting year.

In this analysis, Alternatives 1 and 3 would use the same years of landings in the first two years as the AM trigger, but then Alternative 1 would start using a multiyear average. Alternative 2 would use a three-year average from the first year of implementation. It wouldn't be until the fourth year of the amendment application, and, in this table, that's Fishing Year 2025, until the Alternative 1 trigger would use a three-year average, and that would be the same three-year average used as the trigger under Alternative 2, under these assumptions that were made. At that point and later, the AM trigger under Alternatives 1 and 2 would be the same. Alternative 3 would only ever use a single year of landings as the trigger.

In general, using a multiyear average of landings to trigger an AM would be expected to account for biological and economic variability in the landings, thereby reducing the probability that an AM would be triggered. However, if landings in a particular year are very high, when using a three-year average as the trigger, that one year of high landings could be used to calculate the average landings multiple times, potentially triggering AMs in three consecutive years, and so the benefit of the three-year average depends on the magnitude and the variability in the landings.

Landings for 2020 are not available at this time, but it is expected that they would be less than the previous year's landings, due to the reduced fishing effort that occurred in 2020 during the COVID-19 pandemic. If future landings of spiny lobster in Puerto Rico are landed at the 2018 or 2019 levels, then AMs would likely be triggered every year under all of the alternatives, as those landings would exceed the proposed ACLs under Action 1, and they would greatly exceed them.

Annual landings of spiny lobster on St. Thomas/St. John and St. Croix since 2012 have generally been less than the ACLs that are proposed under Action 1. If landings continue at those levels, an AM would not be triggered under any of the Action 2 alternatives.

At the December 2020 meeting, the council preliminarily preferred the constant catch approach to setting OFLs, ABCs, and ACLs, which is Alternative 3 under Action 1, and using a three-year average as the AM trigger, which is now Alternative 2 under Action 2.

For next steps in the amendment process, following any questions from this presentation, the council could select preferred alternatives for the two actions at this meeting. For Action 1, the council would first select a variable catch or constant catch approach for setting management reference points, and it would then select a management uncertainty reduction buffer for spiny lobster used to set the ACL from the ABC. For Action 2, the council would select the AM trigger for spiny lobster.

The IPT would then develop the framework amendment for final action at the August 2021 council meeting, and, if so requested by the council, staff could present a summary of the draft amendment to the district advisory panels before the August council meeting, and, with that, I will take any questions.

MARCOS HANKE: Thank you very much for a great presentation. Council members, do you have any questions or any comments? Let me see in the chat. Miguel, is there anybody that has requested a turn to ask in the chat?

MIGUEL ROLON: I don't see any. I believe what we should do is to go back to the last slide, where Sarah was presenting to the council the action needed, and then, if you agree, we have to make the motion to staff, and you will see it on the screen, but you need to, after this presentation, select, in Action 1, which is your preference, select the constant catch approach, select management uncertainty, et cetera. Then, in Action 2, you need to look at the trigger for spiny lobster, the AM trigger for spiny lobster.

MARCOS HANKE: I have a question, Miguel. The motion is with all the things in consideration or a part?

MIGUEL ROLON: Each one is separate, and Sarah can help us with the language, if she wishes.

MARCOS HANKE: Sarah, can you please suggest the motion?

SARAH STEPHENSON: Yes, and I do have some drafted. Would you like me to draft that in the chat or send it to Liajay?

MIGUEL ROLON: You can put it in the chat right now and send it to Liajay at the same time, whatever is easier.

SARAH STEPHENSON: I did just do one motion for each of the actions, and so I combined the two steps the council would need to consider for Action 1 into this one motion that I dropped on the side, and you will just need to fill in -- Where I have, for example, Alternative X, you would select either Alternative 2 or Alternative 3, and we would change that to be corresponding variable catch approach or constant catch approach, and then, down later in the sentence, we would just -- Where it says "Sub-Alternative XY", we would just change that to 2a or 2b, and then we would add what percent management uncertainty buffer that corresponds to it.

MARCOS HANKE: Let's go baby steps, because I am not hearing anybody requesting the floor, and I have a question for the council members. On Action 1, select variable or constant catch approach, I need to hear from the council members. Anybody? Carlos, go ahead.

TONY BLANCHARD: Tony Blanchard, for the record.

MARCOS HANKE: Go ahead, Tony.

TONY BLANCHARD: I will select Action 1, select variable or constant catch approach.

MIGUEL ROLON: That's the question. You need to select one.

SARAH STEPHENSON: Tony, the variable approach would change the values from year-to-year, and the constant approach would have the same ACL for 2021 to 2023, and it would change slightly for 2024 if new rulemaking isn't in place by that time, but those are your two options.

TONY BLANCHARD: My option would be a constant catch approach.

SARAH STEPHENSON: Okay.

MARCOS HANKE: I just want to make a comment. We have discussed this in the past, and, at that time, the council was in agreement with the constant approach, like Sarah just explained. Does anybody in the group have any other comments about this specific discussion?

MIGUEL ROLON: Marcos, for the record, you need to develop the record. You have to say, you know, which will be best for the fishery, the constant approach or the variable approach, and then you go with it, but you have now also Carlos Farchette that wants to say something.

MARCOS HANKE: Go ahead, Carlos.

MIGUEL ROLON: Then Andy.

CARLOS FARCHETTE: Well, I wanted to second Blanchard's motion to use the constant approach.

MIGUEL ROLON: Why?

CARLOS FARCHETTE: For Action 1.

MARCOS HANKE: Do you have a rationale?

CARLOS FARCHETTE: Well, that was agreed upon at the December meeting.

MIGUEL ROLON: Yes, but we need to develop the rationale here. Otherwise, we don't need this meeting. We need to hear from the council members that, okay, I select the constant approach because -- Then you develop the record here, and I believe that we also have Andy Strelcheck who would like to add something, Marcos, maybe before you have the motion.

MARCOS HANKE: Before Andy participates, I want to remember, Carlos, that, once we discussed this, the main rationale behind it was that it was much easier for all the participants for this scheme of management to have a constant approach that doesn't change, and that will be too confusing over time, and that was one of the main things. Let's give the opportunity to Andy.

ANDY STRELCHECK: Thanks, Marcos. I am certainly supportive of a constant catch approach, for some of the reasons that have already been stated. It certainly provides, in my view, greater stability

to the industry, and understanding that the catch limits, obviously, won't be changing from year to year. You also look at the landings data for, in particular, the USVI, and landings are well below those catch levels, and so, whether you set it at a variable or constant catch level, you aren't expected to hit the catch limits, based on at least current or historical landings data, and the Puerto Rican data is not dramatically changing whether you select a variable approach or a constant approach, and so I would recommend the constant catch.

MARCOS HANKE: Thank you very much. Tony Blanchard.

TONY BLANCHARD: The constant catch approach is because you know what to expect every year, meaning as to what the ACL is going to be. Staggering up and down is going to be confusing, in my opinion.

MARCOS HANKE: Thank you. Any other --

TONY BLANCHARD: Fishers want consistency. Fishermen all want consistency.

MARCOS HANKE: Thank you, Tony.

MIGUEL ROLON: Point of order, Mr. Chairman. The motion by Tony Blanchard is for the council's preferred alternative to be the constant approach regarding the spiny lobster, and it was seconded by Carlos Farchette.

MARCOS HANKE: Correct, and we are in the discussion about that motion right now, and there is a rationale behind it already stated on the record, and is there anybody else that would like to add to the discussion? Hearing none, I think we are ready to vote. **Is anybody in opposition? Hearing none, the motion carries.**

MIGUEL ROLON: Marcos, you have to say is there anybody in opposition, abstentions, and then your motion carries, just in case.

MARCOS HANKE: Anybody in opposition? Anybody in abstention? The motion carries. Thank you, guys. Thank you to all. The next item for discussion -- Sarah, can you help us again?

SARAH STEPHENSON: Yes, and it would be what level of management uncertainty do you want to apply to set the ACL from the ABC for each island for spiny lobster, and so the options were no buffer, and so the ACL would equal the ABC, a 5 percent reduction buffer, and so the ACL would be 95 percent of the ABC, or a 10 percent buffer, and the ACL would equal 90 percent of the ABC.

Just for reference, in the island-based FMPs for spiny lobster, for all three FMPs, the council selected a 5 percent management uncertainty buffer, and so they set the ACL equal to 95 percent of that ABC, and so that's what you did with the island-based FMPs, but the options here are slightly different, and we are in a different tier, and so I guess the council just needs to, for each island, determine what their level of management uncertainty they feel is, and, if you want, we can go back to the slide that has those buffers.

MARCOS HANKE: Please do.

SARAH STEPHENSON: This is your constant catch ACLs, which is the first motion you just made. From those constant catch ABCs, now you are going to set the constant catch ACL, and Sub-Alternative 3a, which is that third column, would be your ACLs for Puerto Rico for 2021 to 2023, and then, if we don't have new rulemaking in place by 2024, it would drop, and so, for each of your islands, that's what -- Then the next column, Sub-Alternative 3b, has a 5 percent buffer, and then the last column has the 10 percent buffer, and so these are the options presented in the amendment.

MARCOS HANKE: Sarah, a question, just for clarification. On the 388,750, how many times -- I am going to use Puerto Rico as an example, but how many times has Puerto Rico, over the years, passed that number?

SARAH STEPHENSON: In the table that I had in there, it went over -- I'm just going to go back in time, and so 2019 was higher than that, 2018 was higher than that, 2016, 2015, and so those four years were higher than the 388,750, and so four times in the past however many years.

MARCOS HANKE: I'm sorry to be repetitive with my questions, but what is the difference in terms of, for the livelihood of the fishermen, of having -- Exceeding using the 5 percent, or 95, versus equal to ABC, in terms of if you're going to pass it anyway?

MIGUEL ROLON: Marcos, there is another issue with this. Remember the discussion that we had before, where Dr. Roy Crabtree told us that, because of the uncertainty that you have, you also have to have a strong rationale to present to the Secretary as to why you equal ACL to ABC and the buffer that was offered that you all agreed of 0.95 was because that took into consideration that requirement, because of the buffer, and 0.90 was too much. If you want to be consistent, then you have 0.95. The question here is 0.95 across the three areas, in each island FMP, or do you want to

leave that floating somehow?

MARCOS HANKE: My intention, as the Chairman, was to create a little bit of elaboration on this over again, a little bit repetitive, just to refresh the minds of the council to get to this point. I want to hear from the other council members.

TONY BLANCHARD: Marcos, I would go with Sub-Alternative 3b, the 0.95, to stay consistent, for one thing, and, on the other hand, we have not overrun the ACLs for -- I don't think it was ever overrun, and so I don't see the 0.95 as being, with a small buffer, a problem, and, because of the size of our lobsters, and we have a three-and-a-half-inch carapace minimum size. That's my rationale for going with the 0.95.

MIGUEL ROLON: Would you like to present that in the form of a motion, Tony?

TONY BLANCHARD: Okay. I might need some help with the wording. I would support --

MIGUEL ROLON: The wording will be for the council to adopt the alternative of 0.95, as presented in the table here, and so the setting of the alternative that you have in Action 1, you select, as your preferred alternative, ACL equals ABC times 0.95. In other words, you are giving a 5 percent buffer.

TONY BLANCHARD: Yes.

MIGUEL ROLON: So we need a second for that one, Mr. Chairman.

CARLOS FARCHETTE: Second.

MARCOS HANKE: Let's go for discussion. Does anybody else want to comment?

CARLOS FARCHETTE: I have a comment. I noticed, in the fine print on page 10, where it says that, if a subsequent assessment is not completed, and an amendment is not implemented by 2024, the ACL equals the value specified in 2023, and so that means that it would reduce by 19,000 pounds automatically in 2024 if an assessment -- Not a full stock assessment, and that's just an interim assessment, and is that --

SARAH STEPHENSON: Yes, that's correct.

CARLOS FARCHETTE: So who would do that interim assessment? Would that come out from the Division of Fish and Wildlife?

SARAH STEPHENSON: No, that would be the Science Center.

CARLOS FARCHETTE: But that data would have to come from Fish and Wildlife, right?

SARAH STEPHENSON: They would use the same data that they used, I believe, in the SEDAR assessment, and so they would get updated landings data and updated length data, the TIP data, and they would use that to conduct an interim assessment internally at the Science Center, and please feel free to jump on and correct me, anyone from the Science Center, if I said that wrong, but they would do it, and they would update the OFL projections, and they would use the same ABC control rule that the council and the SSC has already established for the Tier 3 spiny lobster stocks, and so they would get updated OFLs and ABCs, and we would apply the same management uncertainty buffer as you guys are selecting here and get new ACLs.

That is all to be done in the future, and it was the council's intent to request that interim assessment, and you remember, in the beginning, the Science Center gave us six years of OFL projections, and the council didn't want to use all six years, and so they said let's use three years, and let's get an updated assessment, after those three years, to set the next round of management reference points, and so that's what the fine print is alluding to, if that helps answer your question.

CARLOS FARCHETTE: I am just concerned that, if something doesn't happen, all of a sudden, the fishermen are going to lose 19,000 pounds, and, as it is right now, we've lost quite a bit of fishermen, through attrition, and so the lobster harvest is not as high as it used to be, and so I'm a little concerned about what would happen if they just dropped it because no assessment was done.

MIGUEL ROLON: But the point is that all of that could happen anyway. What you are setting up here is a mechanism for the interim assessment in 2024, and this is the best approach that the council could think of.

I understand your concern, and the data that is examined by the Southeast Fisheries Science Center, which is the ultimate authority for us, is the data that is submitted by the local governments and/or any data that is collected that is fishery-independent for any particular species that they are going to be looking at. To your question, aside from everything that Sarah told you, which I believe she is right on the money with the process, the data that the Center receives comes from the two local

governments.

CARLOS FARCHETTE: Okay. That was kind of my concern, because I think that, recently here, Fish and Wildlife has been doing a great job, but who knows what's going to happen in 2024 if there's no continuity of government.

MIGUEL ROLON: Well, you have to vote for the right people, I guess.

MARCOS HANKE: Okay. Any further discussion?

ANDY STRELCHECK: Marcos, I have a comment. I'm supportive of the recommended sub-alternative of a 0.05 buffer. I will comment that, for Puerto Rico spiny lobster, given recent landings history, we are potentially looking at a situation where the accountability measures will be exceeded, given the catch limit being set relative to the prior landings history, and so that's something I think just to be aware of, and, regardless of what buffer you set, if we're unable to constrain the catch to that catch limit, that will result in future triggering of accountability measures, if landings stay at these higher levels.

MARCOS HANKE: Yes, I agree with you, and that's why my original question when I started to speak about this, and there is a long conversation behind that. One of the points is that Sarah just described that we have five years that the numbers, reported numbers, of landings are higher, and I'm just hopeful that the new scientific information that comes up is going to help us understand a little better what is really going on in the water, and my concern is that I don't want to tie anything on a science that we need to improve, and we are doing that right now, and that's my point. That's my concern, but, anyway, about the motion, I would like to see the motion, for everybody to be clear, or anybody that can read it for the group, to move along.

One of the things in the motion is that I want to make sure that it includes all the areas and not just one area, if the motion presented by Tony is --

MIGUEL ROLON: Mr. Chairman, let Liajay put it together in the Word software.

MARCOS HANKE: Okay. **A question for Tony is, on your motion, just to be clear, do you want to include all the three areas on your motion?**

TONY BLANCHARD: Yes.

MARCOS HANKE: Thank you, Tony.

LIAJAY RIVERA: This is the motion wording. Please let me know if the wording is okay, or is exact, or if there's any modification. Apologies if I put the wrong people in the motions. Let me know.

SARAH STEPHENSON: Liajay, I dropped an updated one in the chat for you, since we already did the first part of this motion. I think you can just --

LIAJAY RIVERA: Can you please send it on email, because we cannot copy-and-paste this from the chat. I am not able.

MIGUEL ROLON: Just wait. Let's play like we are in the room. Just dictate to Liajay what we need to have on the screen, and that will be better.

SARAH STEPHENSON: Okay. You're actually going to leave how it starts, and you're going -- For Action 1 in the Spiny Lobster Draft Framework Amendment, the council moves to accept Sub-Alternative -- So we're going to grab "Alternative X all the way to Sub-Alternative" and delete that, and so all the stuff in the middle will get deleted. 3b, 95 percent -- Actually, it's just a 5 percent buffer. Then, after the parentheses, add in "for Puerto Rico, St. Thomas/St. John, and St. Croix".

MIGUEL ROLON: For the meeting in December, we would like to invite Sarah Stephenson to come to Puerto Rico.

SARAH STEPHENSON: I believe that should do it.

MIGUEL ROLON: So, Tony, do you agree with the language as written on the screen?

TONY BLANCHARD: Yes.

MIGUEL ROLON: Okay, and the seconder, Mr. Carlos Farchette.

CARLOS FARCHETTE: Yes, I do.

MIGUEL ROLON: Okay. That's it, Mr. Chairman. We are ready for any further discussion and a vote.

MARCOS HANKE: Any further discussion? **Is there anybody else that wants to make a comment or are in opposition? Hearing none, we don't have any abstentions, and the motion carries.**

MIGUEL ROLON: Liajay, just put unanimously accepted. Perfect. Sarah, is there any other action that we need to undertake at this time?

ANDY STRELCHECK: We need to discuss the accountability measures action.

SARAH STEPHENSON: I was talking on mute. Yes, and thank you, Andy. The Action 2 alternatives, you have -- The first was Alternative 1, to keep what is in the island-based FMPs, which is that extended ramp-up. Alternative 2 is to use a three-year average of landings, and then Alternative 3 was to just use a single year, and so those were the options presented.

MIGUEL ROLON: Mr. Chairman, we need to hear from the council which is your preferred alternative.

TONY BLANCHARD: I would go with the three-year average, because that's what we have been doing. Number one, it seems to have been working, and just to keep consistency.

MARCOS HANKE: Anybody else? Tony, can you make a motion?

TONY BLANCHARD: I will need some help with the wording.

MIGUEL ROLON: Okay. Let Sarah and Liajay work it out first.

SARAH STEPHENSON: So we're going to copy the first part of the last action, and we're just going to change it to Action 2. For Action 2 in the Spiny Lobster Draft Amendment, the council moves to accept -- You can copy that first whole sentence of your last one and just change the number, and so grab it from the beginning. Change it to "2". We're going to change it from "sub-alternative" to just "alternative", and that's going to be Alternative 2, and then you can delete the stuff in the parentheses and just put -- Leave for Puerto Rico, St. Thomas/St. John, and St. Croix. Delete "to set the ACLs from the ABCs" and replace that with "as the AM trigger for spiny lobster". After "Alternative 2", you can delete the islands that are duplicated. Perfect.

MIGUEL ROLON: For the record, Mr. Chairman, the motion, to be considered by Tony, is, for Action 2 in the Spiny Lobster Draft Framework Amendment, the council moves to accept Alternative 2 as the preferred alternative for the AM trigger for spiny lobster in Puerto Rico, St. Thomas/St. John, and St. Croix. We need a second.

MARCOS HANKE: Tony, do you agree with the language?

TONY BLANCHARD: Yes.

CARLOS FARCHETTE: Second.

MIGUEL ROLON: You are making the motion easier for Liajay.

LIAJAY RIVERA: I was just waiting, and I didn't want to --

MIGUEL ROLON: That's great. We thank you and Sarah for this. Mr. Chairman, there you have the language.

MARCOS HANKE: Thank you very much, and we're going to hear from the council now. **Is there anybody in opposition? Hearing none, is there any abstentions? If there are no abstentions, the motion carries.**

MIGUEL ROLON: Sarah, have we finished with the spiny lobster presentation?

SARAH STEPHENSON: Yes. Thank you very much.

MIGUEL ROLON: I would like to thank you and Liajay for an excellent job. Thank you very much.

MARCOS HANKE: Thank you to all. Let's go to the next item on the agenda. We're going to the listening -- What time is it? It's twenty to. Miguel, do have time for the strategic plan before 3:00?

MIGUEL ROLON: We can start now with Michelle's presentation, and, if the discussion goes until let's say five to three, we can stop there and continue afterwards, if you agree with that.

MARCOS HANKE: Does everybody agree with that? I didn't hear any comment. Let's go with Michelle Duval.

MIGUEL ROLON: Just for the record, what we are going to have today, especially for those of you who are unfamiliar with the council, at 3:00, we will have a listening session.

It's like moving from this building to another, and that listening session will be chaired by National Marine Fisheries Service, by Sam Rauch, and so the Chairman will introduce him at that time, at 3:00. From 3:00 to 4:00, we have that listening session of Executive Order 14008, Section 216(c). Michelle, are you ready?

MICHELLE DUVAL: Thanks, Miguel. I was going to ask if I could share my screen, and it might actually go faster if I can do that.

MIGUEL ROLON: Okay. We will make you a host. Okay. You have the floor.

CFMC FIVE-YEAR STRATEGIC PLAN

MICHELLE DUVAL: Great. Thank you. First of all, thank you, Mr. Chairman, and thank you, council members. I will do my best to be efficient here today, and so I just have a presentation for you on the draft strategic plan framework.

Just a brief overview of what I'm going to cover, I'm going to just quickly review the components of the strategic plan, because it's been a little while since we've talked about those, and I'm going to review the sources of information that were used to develop the draft framework. I will go over the general plan, organization, and structure, and then the next steps are really review and selection of draft vision, mission, and goal area statements by the council and review and approval of the draft island-specific objectives, as modified by the DAPs.

Mr. Chairman, my suggestion is that I go through the entire presentation, and then we can circle back to those items that are needed for action by the council, if that's okay.

MIGUEL ROLON: Go ahead.

MICHELLE DUVAL: All right. Just a quick review of the components of a strategic plan, and so there's five major components. There is the vision, which is the desired future state an organization would like to achieve, and this is meant to be very aspirational. There's the mission, which is really the fundamental purpose of an organization, sort of what its reason for existence is and its general approach to achieve its vision.

The goals are meant to be those very broad outcomes that help an organization to achieve its vision, and they are not measurable, but they're just steps along the way. Objectives are those items that are specific, and they are often measurable, and you can think of those as mini steps, or a subset of the goals, and then the strategies are really how an organization is going to meet an objective, and those are more action oriented, and so, just to translate this into an example, I am bringing this back from our vision statement brainstorming session back in August of 2019.

My problem is that I'm tired, I'm grumpy, and my pants don't fit, and that probably serves a lot of us right now, after a year of COVID, but my vision is that I look and feel fabulous, and so, to

achieve that vision, my goal is to get healthy, and so, to achieve this goal, I have established three objectives, which are to exercise more, eat better, and to lower my stress, and so these are mini-steps to achieve my goal.

The strategies are how I'm going to achieve these three objectives, and so, to exercise more, I'm going to jog three times a week, do yoga a couple of times a week, and take the stairs. To eat better, I'm going to make dinner at home five times a week, eat less meat, eat more vegetables. Likewise, to lower stress, that yoga is also going to help me lower my stress, and I'm going to spend a little bit more time with my dog.

To translate these components into the council's world, the vision is really what does the council want U.S. Caribbean fisheries to look like in the future, and the mission is really the council's mandate for management under the Magnuson Act, and so what, by law, the council is required to do, as well as its approach for achieving its vision.

The goals are really the big-picture focus areas, and so these should describe the ultimate impact of the council's work, and they are necessary to achieve the vision, and then the objectives, again, will be specific and observable, and these are intended to describe results, and they can be directly linked to an issue or a problem, and then the strategies are just the approaches, again, that the council will take to meet its objectives.

I do just want to review the sources of information that went into the development of these draft vision, mission, and goal statements. First of all is the council vision statement brainstorming session, which we had in August of 2019, and the next is the stakeholder input report, and so I gave you all a presentation on this in December, but this contained all the input from the strategic planning sessions that the district advisory panels went through last August, as well as feedback from the Outreach and Education Advisory Panel and council feedback and issue prioritization, and so we reviewed a bunch of issues and four major theme areas, which I'm going to show in a minute, and prioritized those.

We also conducted management partner outreach, and so this includes the folks at the Southeast Regional Office, the Southeast Fisheries Science Center, as well as the territorial management partners, and then we also had a public comment form that was on the council's website that allowed members of the public, who may not have been able to attend one of the other DAP meetings, or a council meeting, the opportunity to provide input. Then, finally, the island-based

fishery management plans and the previous public input received through that process, and so the goals and objectives of the island-based fishery management plans were also part of the sources of information for this process.

These are just the four different stakeholder and public input discussion themes. You will recall seeing these previously, and so these were focused on management and operational issues; resource health; social, cultural, and economic issues; and communication and outreach.

This is just the structure of the draft strategic plan, or the draft framework, and the Caribbean Council will have just a single vision and a single mission that the council is unified under, and then, underneath that vision and mission, we have four different goal statement themes, again based on those four discussion areas that I showed you on the previous slide, and those are management; ecosystem and resource health; social, cultural, and economic issues; and communication and outreach.

For the first three of these, and so management, ecosystem and resource health, and social, cultural, and economic issues, we will also have a series of island-specific objectives for each one of those goals, and so, for example, the management goal will have a series of Puerto-Rico-specific objectives, and each one of those objectives will have a series of strategies that are specific to Puerto Rico.

Similarly with the other goal areas, with the exception of communication and outreach. If you recall, this was an area that is something that is council-wide, and the priorities that were brought forward during our strategic planning sessions last year spanned all of the council's districts, and so, again, this is how we are planning to set up the strategic plan so that we can most appropriately recognize the unique characteristics of each of the island districts as well as address each island district's priorities.

Now I'm going to get into the vision and mission statement alternatives, and I'm going to start with the vision statement alternatives, and, again, these really build on the concepts that came out of the vision brainstorming session that you all had in August of 2019, and some of the themes that came forward from that were sustainable and resilient fisheries, healthy ecosystems, cultural and social and economic benefits, as well as stakeholder and community input and support, and so you all had directed me to take the results of that brainstorming session and develop three to five different vision statements.

These are the three different vision statement alternatives, which are healthy island ecosystems that support sustainable and resilient local fisheries and fishing communities; thriving and resilient island ecosystems, fisheries, and fishing communities that provide cultural, social, and economic benefits for all; and healthy island ecosystems and sustainable, resilient fisheries that provide cultural, social, and economic benefits for all.

Next, we'll review the mission statement alternatives, and so, again, remember the mission statement reflects the council's mandate under the Magnuson Act, and so what the council is required to do, and so this first sentence that you see here in white up at the top of the slide, which reads: The Caribbean Fishery Management Council conserves, restores, and manages fishery resources in the U.S. Caribbean consistent with the requirements of the Magnuson-Stevens Act. This is really the council's mandate, its reason for being.

The second sentence, which are there three different alternatives here for you to consider, this reflects the council's approach to carrying out its mission and achieving its vision, and so, again, these were based on the feedback that came out of our visioning session that we had in August of last year, which emphasized collaboration and stakeholder input, and so those three alternatives are the council is committed to the stewardship of these marine resources and supporting island ecosystems through collaboration and stakeholder input.

The council is committed to advancing the collaborative stewardship of these fisheries and supporting island ecosystems through education, outreach, and stakeholder input. The third is the council is committed to advancing the stewardship of these fisheries and associated island ecosystems through stakeholder outreach, education, and collaboration.

Next, I'm going to review the different goal theme statement alternatives, and so we're going to start with the management goal alternative, and so some of the common management goals across the different island-based fishery management plans were managing within local ecosystem limits, ensuring the continued health of fishery resources, providing for sustained community participation, fostering territorial and federal collaboration, and minimizing adverse ecosystem impacts.

These three alternatives reflect those themes, and the first is develop management strategies that provide for healthy, sustainable island fisheries and fishing communities and reflect

local ecosystem productivity.

The next is advance management approaches that provide for healthy, sustainable fisheries, account for local ecosystem productivity, and consider the needs of island fishing communities. The third is advance management approaches that promote healthy local fisheries and ecosystems, consider the needs of island fishing communities, and foster collaboration among management partners.

The next set of goal statement alternatives are the ecosystem and resource health goal alternatives, and so some of the common ecosystem and resource health goals across those island-based fishery management plans were focused on ensuring continued provision of ecosystem services, again managing within the limits of ecosystem production, ensuring the continued health of fishery resources.

The three alternatives here are -- The first is support ecologically-sustainable uses that provide for healthy, resilient marine resources and maintain island ecosystem structure and function. The next is promote sustainable utilization of local marine resources in a manner that maintains local ecological structure and function and provides for resilient fishery resources. The third is advance ecosystem-based approaches that support healthy, resilient fishery resources and promote local ecological productivity, structure, and function.

The next set of goal statement alternatives are the social, cultural, and economic goal theme area, and so, again, common goals and objectives across the island-based FMPs were focused on providing for sustained participation of communities, minimizing adverse impacts on communities, promoting fair and equitable use of the resource, and recognizing differences in local environment, culture, and user groups, among other things, and so these three alternatives -- The first is ensure that management decisions consider the unique characteristics and needs of island fishing communities, while promoting fair and equitable resource use.

The second promote fair and equitable resource use, while considering the social, cultural, and economic needs of island fishing communities, and the third is ensure that management decisions promote fair and equitable resource use and consider the unique social, cultural, and economic characteristics of island fishing communities.

The next set of alternatives that we'll review are the communication and outreach goal alternatives, and so, again, these -- The communication and outreach goal is something that spans the

entire council jurisdiction, and some of the themes that came out of our strategic planning meetings with the district advisory panels and the O&E AP and the council were, first of all, that more outreach is needed, and more is always better.

They were also focused on the diversity of tools to reach different audiences, increasing public participation in the process, increasing educational outreach materials, specifically for the general public, things like ensuring that our communications are clear and understandable.

The three different communication and outreach goal alternatives are engage a variety of audiences, through education and outreach, that fosters understanding of and participation in the council process. The second is engage, educate, and inform a variety of audiences to improve public understanding and participation in the council process. The third is foster engagement in the council process, through communication and outreach, that informs and educates a variety of audiences.

Now I'm going to quickly review the draft island-specific management objectives, and so, again, these were developed based on the island-based FMP objectives as well as the feedback from the district advisory panels during the strategic planning sessions that we had last summer, and I do want to note that these have been reviewed by the DAPs. They did that at the very end of March, and they provided feedback on these island-specific management objectives, and they also reviewed a set of potential strategies for each one of those, and the DAPs are going to be meeting again in June to provide additional input with respect to strategies under these objectives.

Before I actually get into those, I do want to offer a few general observations, and so, within each theme, there are significant overlaps in the priority issues that were identified by the DAPs and the council, and so this results in very similar, and often identical, island-specific objectives, and this is not very different from the island-based FMPs.

There is a lot of overlap in the goals and objectives among each of the three districts, and some of the islands actually have exactly the same objectives within their FMPs.

The next is that a lot of the priority issues that the DAPs and the council discussed are really more appropriately addressed as island-specific strategies or as activities as part of an implementation plan, and that will be sort of the final product of this process, is an implementation plan for next year, and so I

just want to make sure that everyone understands that, ultimately, all U.S. Caribbean island districts are working towards the same broad goals.

These are just -- I am not going to read these, the way that I read the different alternatives for the vision and mission and goal statement themes. I just want to note that these are the draft Puerto Rico management objectives, and you are going to see that the ones for St. Thomas/St. John, as well as St. Croix, are very similar, and, in some instances, identical.

I'm just going to highlight some of the commonalities that were identified during our planning sessions, which were themes of accurate and timely commercial and recreational data collection, enforcement of existing regulations, fisher involvement in data collection, territorial licensing requirements, incorporation of climate change, balancing commercial and recreational concerns, and things like that.

Each one of the DAPs had slightly different takes on that, with respect to potential strategies, but you will see that these four objectives reflect accurate and timely data collection programs, promotion of collaborative research and fisher involvement in meeting our science and information needs, ensuring that management measures encourage regulatory compliance, and then collaboration with both domestic and international partners on the management approach and ensuring that those management approaches are efficient.

It's very similar for St. Thomas/St. John, and, in fact, those first four are exactly alike. The one thing that was also identified as a priority by the St. Thomas/St. John DAP was climate change, and so there's an additional objective here considering the potential impacts of climate change.

Then, finally, the St. Croix draft management objectives, again, these are identical to those four that you saw for Puerto Rico, again due to the fact that all of the DAPs had significant overlap in the identification of priority issues.

The next set are ecosystem and resource health objectives, and so, again, there was a lot of commonality in the priorities that were identified by the different DAPs, and so these included a suite of issues related to erosion and sedimentation, coastal development, different forms of pollution, habitat loss and destruction, as well as habitat creation and rehabilitation, a lack of biological and ecosystem information, as well as illegal fishing and climate change.

These four draft objectives are meant to incorporate those, but, also, the significant amount of work that the council has been doing over the past couple of years with respect to the development of your fishery ecosystem plan, which is sort of the framework that you're using to implement your island-based FMPs, and so that's what this first objective is about, is to really implement what's being incorporated into that plan.

The second objective is focused on identifying and managing and protecting the habitat resources, and the third is about collaborating with management partners to address the impacts of natural disasters, and this is something that was specifically identified by the Puerto Rico DAP, and then collaborating with management partners to address enforcement concerns that can affect ecological relationships.

Similarly, for St. Thomas/St. John, again, we have an objective that's focused on implementation of the fishery ecosystem plan, specifically as it relates to the St. Thomas/St. John ecosystem. Again, an objective about habitat rehabilitation and restoration of fishery resources, collaboration with management partners, again, to address those enforcement concerns that can impact ecological relationships, and then a final one is collaborating with science partners to identify and address ecological, data, and information gaps.

Again, these are the St. Croix draft ecosystem resource health objectives, and they're very similar to the last two sets that you saw, because of the overlap that has been identified, and so we have an objective on the fishery ecosystem plan, an objective pertaining to habitat, an objective pertaining to rehabilitation and/or creation of fishery resource habitats to support that ecosystem structure and function, collaboration with management partners to address enforcement, and then, also, ensuring that ecosystem approaches are responsive to climate change.

Finally, we get to the draft social, cultural, and economic objectives, and so, with respect to those, again, some of the overlaps, the issue overlaps, were pretty significant here, and so one of the things that all three of the DAPs and the council identified were things like closed seasons and stock assessments for affected species, and this was something that actually affects or is incorporated into objectives that cross all of the different goal theme areas.

Illegal and unlicensed commercial fishers, lack of social and economic data, things such as infrastructure needs that impact the

social and economic ability, or success, of fishing communities, the impacts of inadequate enforcement on social and economic wellbeing in these communities, and so these four draft objectives that you see here for Puerto Rico, again, you're going to see similarities for St. Thomas/St. John, as well as St. Croix, but the first is focused on promoting the collection of that social and economic data that is needed to make decisions.

The second is focused on evaluating the social and economic impacts of management decisions across different user groups. The third is focused on promoting efforts that will support social and economic opportunity and stability, and then the final one is focused on those impacts of enforcement that everybody identified.

Again, these are very similar, identical in fact, for St. Thomas/St. John. Then, for St. Croix, the St. Croix DAP offered a few edits to these draft objectives, and so these are incorporated here, and the first objective focused on the collection and dissemination of that social and economic data that informs management decisions, and the next is evaluating the impacts of management decisions, and then the third is really considering the impacts of not just enforcement, but non-regulation and illegal fishing, and that was identified by the DAP.

Then, finally, we get to the draft communication and outreach objectives, and so there were three major areas that emerged from the discussions under this theme area, and the first was really focused on tools, and the second was focused on participation, and the third was really focused on understanding and awareness.

This first objective is use a variety of a communication tools that consider the social, cultural, and economic characteristics of target audiences, in coordination with the Outreach and Education Advisory Panel. The next was to promote participation of a variety of stakeholders in the council process, and then the third is improve public and stakeholder understanding and awareness of fisheries management, current issues, and the council process.

Just the next steps in this process are, as I mentioned earlier, the district advisory panels are going to be convening in June to review the potential strategies for island-specific objectives within each theme, and we sort of had an initial cut at that at the end of March, but we felt it was important for the DAPs to have an opportunity to really thoroughly review those and refine them.

Also, O&E AP review of the communication and outreach strategies, and then, after that is incorporated, we'll have a complete draft of the strategic plan, and, as Miguel mentioned at the beginning of this meeting, the council will approve the draft of the strategic plan for public review and feedback in July, and, once we get comments back, I will present that public input to you all and provide any changes that have been suggested as a result of that input, and then we'll have approval of the final strategic plan.

We're coming to the light at the end of the tunnel, and then one final component is development and approval of an implementation plan, and so an implementation plan really takes those strategies and objectives and translates those into actions specific to the upcoming year.

With that, Mr. Chairman, I think what -- As I indicated at the beginning of the presentation, the council action that is needed is really selection of a draft vision statement, mission statement, and goal statement alternatives for each one of those goals, and then we're just recommending that you approve the island-specific objectives under each one of those themes, since they've already been reviewed by the DAPs and will undergo further review in the upcoming months, and so I'm happy to take any questions.

MARCOS HANKE: Any questions to Michelle? I have an observation to you. Depending on the question of how this goes, do you have any strategy of how we can move this in an effective way during this meeting, and does that depend on the comments that we receive?

MICHELLE DUVAL: My suggestion is that we take these one at a time, and so, up here on the screen, I have the vision statement alternatives, and so I think -- I will also defer to advice from Miguel as well, but I think, if the council can select one of these three alternatives and come to some consensus for approval of that, I can identify that, and we can do the same thing for the mission statement in each one of those four goal area statements, and then, Mr. Chairman, if a motion is needed, I do have -- We can just slip the alternative number into some text that I have developed that I could quickly email to Liajay that could be displayed on the screen.

MARCOS HANKE: Any comments from the council members? Would anybody else like to make a comment?

MIGUEL ROLON: Marcos, we have nine minutes to three, and so I suggest that we go one-by-one, and, rather than having a motion for each one of them, we pick one, the one that we like, and, if

you like it, then, by silence, you approve it.

Then, on the 21st, we will have a chance to go over this again, and we will have a meeting in June with the DAPs, and Michelle will be able to fine-tune that is needed to added or changed or whatever, and so you will have an ample opportunity on July 21 to go through the whole document, but, at this time, if you look at the vision statement, and remember that vision is where you want to go.

The goal is where you are now, and then the objectives is what you're going to do to achieve your goal, and so, here we have -- They look like motherhood and apple pie, but they are not, and they are subtle changes, but very important changes, and so, if you look at the vision statement, then you have -- The first alternative will be healthy island ecosystems that support sustainable and resilient local fisheries and fishing communities, but you also have, in the case of the second alternative, thriving and resilient island ecosystems, fisheries, and fishing communities that provide cultural, social, and economic benefits for all. Healthy island ecosystems and sustainable, resilient fisheries that provide cultural, social, and economic benefits for all.

One is a little bit different from the other, but I believe that the one in the middle goes in tune with what the island-based FMPs essence is, which is addressing each area by itself, and then I believe that this vision statement is encompassing all that we have been discussing, because you want resiliency in each one of the island ecosystems, and you want that fishery to be thriving and be resilient, and you want the fishing communities that provide the cultural, social, and economic benefits for all also thriving and resilient.

It goes more into the specifics of what you have been saying all along for the last ten years, and so my personal vote would be for the one in the middle, but it's up to you, really, which one you like.

MARCOS HANKE: I think I share with Miguel that the middle one is the most complete and describes why we are seeking this on the council, and I would like to hear from the rest of the council members, maybe to move along on this one, if you guys agree. Are there any comments against it?

MICHELLE DUVAL: Mr. Chairman, I see in the chat that Damaris has said that she agrees.

MARCOS HANKE: Anybody else want to say something?

TONY BLANCHARD: I would agree with Miguel and Marcos, because I think this is the one that covers basically what we have been saying and looking for, and so I would support Number 2, or the one in the middle, however you would like to put it.

MARCOS HANKE: Okay. The one in the middle, or the second one on the list, it looks like is the consensus from the people. Is there anybody in opposition to choosing this one? Hearing none, that's the one.

MIGUEL ROLON: It's five to three.

CARLOS FARCHETTE: Was there a motion?

MIGUEL ROLON: No, you don't need a motion. Just go with it. By the overall silence, I believe that everybody agreed with it, and we heard from Damaris in the chat, and Tony stated it, and we'll move to the second one, to the other one, and we have time, I believe, for one more.

MICHELLE DUVAL: So, again, the mission is really your reason for existence and what the council's mandate is, and so that's what that first sentence reflects, and so that's the first sentence of your mission statement, and it's really the second sentence that represents the council's approach, and that's what you're focusing on right here in this three alternatives.

MIGUEL ROLON: Here, we need to select one of these three, and, again, if you look at it, consider it based on what you decided to be your mission statement, and so, rather than me picking one, I would like to, for example, hear, Marcos, what you think and then followed by the others. At 3:00, we will break for the listening session.

MARCOS HANKE: From what I am -- I am really between the first and the second, and I feel like the second is a little more inclusive and complete, and I will say that the second one is the one that I will pick. Anybody else?

TONY BLANCHARD: I am in agreement with Marcos. I think the second one is probably the best alternative, or the best statement.

MARCOS HANKE: Anybody else want to comment or is in opposition to it?

MICHELLE DUVAL: I see that Damaris says, in the chat, that any of the three, and so she seems to be in agreement.

MARCOS HANKE: It looks like it's the same case, and we will stay with that middle one, the second one on the list.

MIGUEL ROLON: Mr. Chairman, I believe that we should break here and then ask Dr. Duval -- How many other decisions do we need from the council? When we break at 4:00, we can come back to them.

MICHELLE DUVAL: Thank you, Miguel. Thank you, Mr. Chairman. We just need four more. We have management; ecosystem and resource health; social, cultural, and economic issues; and then communication and outreach, selection of those goal statements.

I think, because the district advisory panels have already reviewed the island-specific objectives, and because we plan to reach out to the Outreach and Education Advisory Panel on the objectives as well, that input funnels up to the council, and so, if there's no objection to any of the island-specific objectives, we can leave those for when we have the complete plan, and there's just four more selections after the listening session.

MIGUEL ROLON: Okay, Mr. Chairman.

MARCOS HANKE: I think that sound like a plan. Let's do that. Miguel, the process now to -- We're going to pass the screen.

MIGUEL ROLON: Let me thank Michelle for understanding and offering the alternatives and to continue after 4:00. I believe that we are ready, at 3:00, for the listening session that will be chaired by Sam Rauch, and he will be leading this meeting, and he just entered the meeting. Marcos, can you introduce Attorney Rauch for the group?

MARCOS HANKE: Yes, and I would like to introduce and pass the meeting, the running of this meeting, to Sam Rauch for the listening session of President Biden's E.O. Titled "The Climate Crisis At Home and Abroad". Sam.

LISTENING SESSION OF PRESIDENT BIDEN'S E.O. TITLED "THE CLIMATE CRISIS AT HOME AND ABROAD: E.O. 14008 SECTION 216(C)

SAM RAUCH: Thank you very much for having me here to discuss the recent Executive Order. On one of his first days in office, President Biden issued Executive Order 14008 titled "Tackling the Climate Crisis At Home and Abroad". It is quite lengthy, and it has a number of sections dealing with a wide variety of subjects, wind, oil and gas, and other issues.

One of those sections is Section 216, which itself has a number of sub-provisions, and I will talk about a few of them. The one in particular that we wanted to talk about is 216(c), and that one, and I will read it.

I thought I would have a slide that would say it, but I'm going to read it, and I apologize for reading it verbatim, but it requires NOAA to initiate efforts, in the first sixty days from the date of this order, to collect input from fishermen, regional ocean councils, fishery management councils, scientists, and other stakeholders on how to make fisheries and protected resources more resilient to climate change, including changes in management and conservation measures, and improvements in science, monitoring, and cooperative research.

That's what we're doing here today, and, for those of you who are not familiar with me, I am the Deputy Director of the National Marine Fisheries Service. I oversee the Regional Offices and the Headquarters Offices, and, on behalf of the whole administration, I am formally asking for the council's input and advice on how to make fisheries and protected resources more resilient to climate change, including changes in management and conservation measures and improvements in science, monitoring, and cooperative research.

I will say this knowing full well that this is not something that is new to the councils. The councils, in general, manage with an eye towards ecosystem resiliency, to try to ensure that we can provide a stable source of marine seafood and recreational opportunities, year after year, despite the various environmental perturbations that may occur.

We constantly design our conservation and management measures to look at things like that, and the councils have been looking at climate change as one of those changing variables and trying to figure out how that works into management, such that we can continue to provide the resources that we do and make sure that the protected resources are not adversely impacted as we do that.

The councils have a long role, and I think the President recognized that when, explicitly, he indicated that the councils should provide advice on this subject. We know that climate-related changes are affecting our ecosystems in various ways, whether we're talking about warming oceans, increasing acidification, rising seas, and that affects not only the resource, in that you may have stocks that are adversely affected, and so they may not be as healthy as the population, or they may just move, following a temperature gradient or an acidity gradient.

The fishing communities themselves, which are often on the coastline, we can see significant impacts to those as sea level rise affects that, and it affects the coastal estuarine areas that are important for productivity.

This is something that councils deal with quite substantially across the country, and I know this is something this council has also dealt with, but we're asking for your input here, as required by the Executive Order, and we do look forward to getting your comments and expertise on this issue about things either that you're currently doing or things that you believe we could be doing better, both we as the federal government or you, clearly with your strong role in developing management conservation measures and providing stakeholder outreach and initiatives to get input from the fishing community.

We would like your thoughts on those things, and it is not just -- - Although you clearly, you yourselves, are a Magnuson-Stevens Act body, but it's not just related to that. To the extent that you have views on how we can use other authorities, the Endangered Species Act, the Marine Mammal Protection Act, the Sanctuaries Act, the Coastal Zone Management Act and others, all of that is subject to input, and we would like your feedback on that.

The President did not lay out explicitly what we are supposed to do. The Executive Order just indicates that we are supposed to start the process of collecting information, and, in doing that, he did not indicate explicitly how we are supposed to use that information, but we will use it as we, and you, take actions, over the course of the next year or more, to inform rulemaking, policymaking, resource planning that we may do, in terms of how we allocate resources here or there.

Specifically, we are looking at the next series of our regional action plans that we developed under the NOAA Fisheries Climate Science Strategy, and we will clearly take input into that.

I have been giving this presentation to a number of councils, and a couple of other things that come up, before I take public comment, and one is we recognize that the councils do not meet in constant session, and so, if you give us input today, we will very much take that. If you give us input later, we will also take that. This is not a one-and-done kind of approach. We are interested -- Much like the councils themselves, and you're constantly looking at your policies and strategies and tweaking them and making them better, and we're interested in doing the same thing. If you're not able to provide full comments today, but wanted to take time over a meeting or two, that would be all

right as well.

We did have a public comment period that ran through the beginning of April for the members of the public who wanted to provide independent of the council process, and that has been concluded, and we did get some valuable input from that, and we look forward to adding the council's views to that as well.

One last thing that I want to talk about, because this always comes up, which is the other part of 216, 216(a), and so we've been talking about 216(c), which is the one that explicitly mentions the council and is a requirement on NOAA.

216(a) is a requirement on the Interior Department to prepare a report on how we might conserve 30 percent of the U.S. land and waters by 2030. The Executive Order does not define "conserve", and it doesn't use the word "protect". It means conserve, and it does not say that we are going to conserve anything tomorrow, but it is a report that the Interior Department has been working on, and I imagine -- I have not seen the report, but I imagine that the report, when it comes out, and it is due any day now, or at least to the White House, would -- Rather than outline specific areas, which says conserve this area, conserve that area, I imagine that it will lay out a process for which you would evaluate how much of the ocean is currently being conserved, what that metric actually would look like.

That metric is not defined, and so we do not currently know what is the definition of "conservation", how much of the ocean or land is being conserved, and then what would be the process for stakeholder engagement in deciding if we are below 30 percent and how you would get to 30 percent, and so this an Interior-related effort.

The report is due imminently to the White House, but Interior is still taking comments on that, and I envision that, even once the report comes out, there will be a public process for gaining further input into some of those questions. Any comments that you give us now under 216(a), we will forward to the Interior Department, and they will be taken into consideration, to the extent that the administration develops a process going forward for stakeholder engagement.

That was quite a number of things, Mr. Chairman, and I do apologize, and I thought that I would have a brief PowerPoint, but that's fine. I am happy to take any questions or comments that the council may have on that issue.

MARCOS HANKE: Thank you very much. Council members, would any of you like to comment?

MIGUEL ROLON: Marcos, if I may, first, thank you to Sam Rauch for opening the meeting and the presentation. The first part is 216(c), which is comments on how we can make the fisheries resilient to climate change, and protected resources, and how do we need to change any management scheme that we have, conservation measures, and how we can improve monitoring and cooperative research to the things that we have.

My proposal is, and taking into consideration what Sam just said, I suggest that we can put together a committee of maybe staff and the Chair and put together a letter, a draft letter, taking into consideration the comments that we have received and the comments that we might receive today, so we can send it to Sam's office for consideration.

Regarding 216(a), which is mostly the one that people are more concerned about, 216(a) is really for the Department of Interior, as stated today. However, we can put together also a letter addressing that, and other councils have done so, and, for example, there is an issue about what is the meaning of "conservation", because, for us, conservation is anything that you do under the Magnuson Act to manage the fishery on a sustainable basis.

For others, conservation is don't take it and don't touch it, and this is closed to any activity that will cause any harm to the fisheries and the habitat that we have here, and that is more or less the two issues that have been addressed by letters that we have seen, and so, for conservation, we would like to express the point that conservation, under the Magnuson-Stevens Act, is taken in consideration all the time, for the last forty years, and we consider that around 72 percent of the fisheries are under some sort of conservation management scheme, or management regime rather, where we protect the resources and protect the habitat and so forth.

Regarding Alternative (a), by coincidence, you just heard the presentation, and saw the presentation, by Dr. Beltran this morning, where she found that 27 percent of the areas within the area of jurisdiction of Puerto Rico and the Virgin Island already occurs, for some reason or another, and the National Marine Fisheries Service considers area closures for fishery purposes, but those are not considered by the Department of Interior, or the IUCN, for that matter, just for discussion, and just to make a point that we don't follow IUCN. We follow MSA and the other applicable laws of the United States. However, those laws,

sometimes, mimic what the IUCN and other international organizations do.

At this time, Mr. Chairman, what we would like to hear is -- We have an hour, until 4:00, and are there any comments that the group present here, council members and chairs of the DAPs, et cetera, may have to provide to Sam at this time regarding climate change and how we should be moving towards the management and conservation and moving the conservation measures that we have for improvement of the science, monitoring, and cooperative research that we have? Today, we heard that we need to address those, for other reasons, and so this is the time for the group to talk.

MARCOS HANKE: We have Nelson online, Miguel. Nelson Crespo. Nelson Crespo is the Chair of the DAP Puerto Rico.

NELSON CRESPO: Thank you very much, Mr. Chair. I just want to read a letter that I have here, and I want some indications where to send my comments. I hope to contribute something with my comments.

Good afternoon, everyone. My name is Nelson Crespo, and I am a commercial fishermen, and, in one way or another, I have been involved in the management and protection of our fishing resources for many years. These are my comments and suggestions to President Biden's Executive Order 14008.

On Section 216(c), how to make fisheries and protected resources more resilient to climate change, as a commercial fisherman for more than forty years that have witnessed the changes in our coast, I understand that the greatest negative impact on our waters and resources in relation to climate change come from the land to the sea.

Coastal development and erosion and river runoff and water discharge to the sea are a few issues that should be addressed urgently to make habitats and the marine ecosystem stronger to fight climate changes. This pattern greatly affects our waters, which consequently affects the entire marine ecosystem in the U.S. Caribbean.

Develop and implement, among the fishing community, the use of new and effective fishing techniques and promote, in the market, the consumption of lower-demand species, and that would greatly help to reduce fishing pressure from other species with higher demand. Finally, the allocation of the necessary resources to implement effective enforcement in the management plans would be a great help to achieve the proposed goal.

In Section 216(a), conserving at least 30 percent of our land and waters by 2030, the U.S. Caribbean cannot take any more closures. It is a small size, and it has many closed areas in addition to the management plans under the Magnuson law. The Caribbean, by its location, has a great advantage to protecting their waters in a natural way.

In winter, we face cold fronts with high-pressure systems that bring strong winds and high swells. In summer, we are subject to tropical waves and storms and hurricanes. In addition, we are facing periods of strong currents through the year. The combination of all these factors will cover them not like closures.

In my opinion, the integration of coastal communities in the existing management plan and expand collaboration with the scientific community and the allocation of the necessary resources to implement a program of education, management, and enforcement will help to complement the health of our resources. Thank you very much.

MARCOS HANKE: Thank you, Nelson. Sam, do you want to make any comment, or should we go for the next comment?

SAM RAUCH: Well, Mr. Chairman, I am happy to have a discussion if you would like, and I think that those are very good comments, in terms of particularly the importance of climate change and how the council may or may not suggest we deal with them.

I would be interested in -- In terms of getting them to us, any comments that the council wishes to forward -- The public comment is closed, but we are happy to take comments from the council, including those comments as well, and so, if the council wanted to gather that written letter, or other comments, and send them to us, we would accept those.

MARCOS HANKE: I would like to propose to the council to create this committee to create the letter that was proposed by Miguel and to streamline and to make -- To produce a letter that has a little more elaborate ideas behind it and that can be helpful for the whole process that is taking place. Do all the council members agree with that? Hearing no objection --

MIGUEL ROLON: Marcos.

MARCOS HANKE: Go ahead, Miguel.

MIGUEL ROLON: Also, for the record, we need to hear from the

voices of the council, because I can write a letter myself right now, but, if I don't have any support from the council, we don't do anything, because I am just a staff member.

MARCOS HANKE: Miguel, I was just --

MIGUEL ROLON: Wait. What Sam is proposing is that we address a letter to him, with your signature, and then incorporate Nelson's comments, as maybe an attachment to that letter, and any other comments that the rest of the council may have. In addition, the committee should be very small, with a due date, and no more than three weeks from now, that letter should be in the hands of Sam at the office in Washington.

Our proposal for the committee would be the Chair and the two local government designees, and the letter should be circulated among all the chairs of the DAPs and the SSC, et cetera, so we will have their input ready for the final drafting of that letter.

MARCOS HANKE: Yes, Miguel, and I was just following up on that idea, and I want to ask, one more time, to the council members, if they have anything else to add. Otherwise, I have something to say. In the meantime, if people are thinking, I want to --

TONY BLANCHARD: Marcos, I've got a comment.

MARCOS HANKE: Go ahead, Tony.

TONY BLANCHARD: This is for Sam, because -- (Mr. Blanchard's comment is not audible on the recording.)

MIGUEL ROLON: Tony, we are having problems with -- Tony, we have problems with your audio. You will have to probably leave the room and come back again for a better audio.

MARCOS HANKE: We cannot hear you very well.

TONY BLANCHARD: Can you hear me now?

MARCOS HANKE: Yes. Go ahead.

TONY BLANCHARD: This is my take on the whole thing of climate change. We all know that climate change is not a simple fix, but I believe in giving responsibility back to the people who hold the -- Let's say who is responsible for taking care of certain things. I am on the same page as Nelson -- (Mr. Blanchard's comment is not audible on the recording.)

MARCOS HANKE: We cannot hear you.

TONY BLANCHARD: Which I don't know how much the council's input can do anything about it, but --

MARCOS HANKE: That was very broken, and I couldn't hear it very well.

JULIAN MAGRAS: Just sign-off and come back on.

MARCOS HANKE: In the meantime, I want to say that Damaris Delgado just put in the chat her intention to participate on this special committee, because the local government DNR has projects and things running around the issue of climate change, and I want that to be on the record.

In the meantime, until Tony comes back, I would like to say something in terms of comments for the Section 216(c). I think supporting the local researchers and local fishermen, by creating a program, or a committee, or a system, like a national sustainability fishery program, that addresses the way we do the research and the way we conduct the fishing and the way we can adapt the science, and that will be something desirable to everybody, to take the decisions in the right direction.

Ideally, for the Caribbean, especially in the case of the Caribbean, we have very peculiar situations, in terms of habitat and cultural aspects and resources, that the local feedback from the fishing communities and stakeholders, and local researchers especially, are very important in this process.

In this regard, I sent a letter addressing, with a little more elaborate thought, a few weeks ago, and, also, I sent some comments on the Section 216(a), which is -- A question. Do you want to hear that now, or should I just leave it as a letter, a personal letter, or do you want to include that in the council discussion, Sam?

SAM RAUCH: Well, that's up to the council, Mr. Chairman. If the council would like to include your thoughts, or any thoughts, in that letter. As I said, we are only specifically here talking about 216(c), but, if you would like to give us comments on 216(a), we will take them and circulate them to Interior, as appropriate, or, if there is a future collaborative role, and I imagine there will be, we'll take those into consideration. If the council would like to do that, we will accept those comments on 216(a) and get them to the right agency, whether that's us or somebody else.

MARCOS HANKE: Tony, are you ready? Tony is not ready, and I'm going to take the time to do that. Section 216(a), to include all managed areas in the analysis, because one size doesn't fit all for all regions. Include in the analysis areas closed by special management, especially the ones that are created with extensive public input over the years, like MSA-managed areas. There is no point to arbitrarily close more areas just to meet a potentially arbitrary 30 percent of land and water and water closures, knowing that all the areas are not the same or include the same habitats or resources.

Appropriate management, while respecting the expertise of each federal and local agency, is, at minimum, appropriate. The U.S. Caribbean has already a major percentage of its fishable grounds and areas closed or fully managed by different agencies. Any decision must be based on science and the socioeconomic effects of its creation.

Solution, add more and new resources to research and enforcement to the U.S. regions, especially the Caribbean. This will result in a great benefit to the natural resources and stakeholders. I invite you to consider a multinational effort to protect and manage natural resources, especially on species or issues that are Caribbean wide.

This will be more desirable and will result in a greater environmental benefit. The U.S. cannot fix the mistakes of other nations or countries, but we can manage our resources using science, always recognizing the U.S. and local communities and fishermen are responsible stewards of the sea, and that is my comment.

MIGUEL ROLON: Marcos, to whom did you address your letter?

MARCOS HANKE: I sent the letter via email, and I wanted to share it with my partners on the council, and the email was to oceanresources.climate@noaa.gov, and I received a note that it was received, because I received like a receipt that my comment was received, and this is what I have to share with the council.

SAM RAUCH: Mr. Chairman, if I may, that was the public website that we opened to accept comments from the public during the comment period, which I mentioned was to April 2, and so you sent it through that public portal, and we received that, and that is in the record already, and I'm happy to receive that again through the council, but just to know that we did receive that through the public comment process.

MARCOS HANKE: For me as Chairman, I would like to receive comments or observations from my partners on the council, to see if they share the things that Nelson and myself have expressed today, or anything new, just to give clarity that we are all on the same page, which is what we are looking for in this message that you will take from us. Anybody else? I would like to hear from Carlos Farchette, if he can help us.

CARLOS FARCHETTE: Sure, Mr. Chairman. I agree with what you and Nelson have already proposed in your comments, and I do believe that those two comments should be incorporated in that small ad-hoc committee that staff is going to form with Miguel and you and Graciela and whoever else they pull in there, and the two government representatives, and so I do agree.

MARCOS HANKE: Thank you. Anybody else? I would like to hear from Tony, because he was cutting off, and I don't want to miss what he had to say.

TONY BLANCHARD: (Mr. Blanchard's comment is not audible on the recording.)

MIGUEL ROLON: Tony has still a problem with the audio.

MARCOS HANKE: Tony, we cannot hear you very well.

TONY BLANCHARD: Can you hear me?

MIGUEL ROLON: We are hearing you now. Go ahead.

TONY BLANCHARD: I am in agreement with Nelson and, by the sound of it, Marcos is on the same line. I believe that the government, the local government, has a part to play, and a big part to play, in this. I believe that agencies need to step up to the plate and take the responsibility and do the job with management, as for DPNR, when it comes to runoff and certain other things that needs to be addressed.

I think some of the problems are fixable, and I think we have more than enough rules and regulations on the books that, if it was to be enforced, we would pick up some of this mess that we are in and clear it up, but I don't know how much leverage the council actually has in doing so, in making the local government do what it needs to do.

Just like Nelson said, this starts from the ridge to the reef, and we could try to fix the reef all we want, but, if we don't straighten out the problems on land that goes into the sea, we are

fighting a losing battle here, and that's the reality of it. It would be like trying to plug a whole in a dike. You could only plug that dike so long before it blows, and so, unless we fix these problems from the shoreline, we can't fix the problems in the sea, and that's my comment.

MIGUEL ROLON: Mr. Chairman, in the chat, I have from Damaris Delgado that climate change is a priority for the Puerto Rico DNR, the Natural Resources Department, and so she would be -- I believe that the three people who have spoken, Tony, you, and Nelson, are more or less in agreement, and so it's a matter of drafting a letter containing those paragraphs and put it together so that everybody will have a chance to see it before we send it to the appropriate office, and I believe that we can send it to Sam Rauch, with a copy to Andy Strelcheck, who is the Regional Administrator.

We should do that as soon as we can, and so I propose that, if everybody agrees with the committee, we can draft the letter, let's say by next week, and, the following week, we will circulate the letter, so we send it on time.

The reason for that is that, although the interpretation by National Marine Fisheries Service was that we have sixty days to start the process, and some people felt it was sixty days to submit all the documents, and so we are on time to submit that information. Marcos, do we have anybody else, Vanessa or Damaris or Nicole Angeli, that wants to -- Especially Nicole Angeli, who is going to be a member of the committee.

MARCOS HANKE: I just have a text from the chat for a turn to speak from Nicole Angeli.

NICOLE ANGELI: Thank you so much for bringing up this important issue and for having the listening session. I'm excited to be on the committee, and I was also on the committee for the Association of Fish and Wildlife Agencies and the letter that they created, and I just wanted to read into the record not the specific goals, but the general principles that we've agreed on as directors across the country, that I believe may help guide any discussion.

The first is cooperation early and often, that state agencies, along with the federal agencies, have the primary responsibility and authority for conservation of fish and wildlife and their habitats and uses. The second is to clearly define purpose and intent. There is very considerable concern for definitional presupposition, and so what is protection versus conservation? What is sustainable use? What is regulated hunting and fishing and trapping? Clear definitions will help us to sustainably use

our resources and not affect the livelihoods of communities, especially disadvantaged communities.

Third, a one-sized approach should not drive policies or actions, much like we have our island-based fishery management plans. Individual states and jurisdictions should be recognized for their individuality in any legal criteria. Fourth, that science-based collaborations should drive policies and actions. State agencies have a long history of conserving natural resources, restoring natural resources, managing and regulating natural resources with scientists, and so any policies should recognize that demonstrable track record of our jurisdictions.

Fifth, that we should use our existing regional partnerships. I would recommend that our regional fisheries councils are included in any landscape conservation goals, because they affect multiple jurisdictions and provide the appropriate scale for collaboration and conservation of fisheries.

That we establish collaborative and transparent processes. The processes, the goals and successes, of the Thirty by Thirty will hinge on whether or not we take everyone's viewpoint and perspective and facts into account. Robust stakeholder processes, like the CFMC, include fishers, anglers, outdoor enthusiasts, private landowners, our scientists, our state agencies, our federal agencies, conservation organizations, advocacy organizations, and that's the only way we'll have a true partnership.

Last, we have something in our states called species of greatest conservation need, and many of our fish are on those lists, and we have proactive and voluntary conservation of those species of greatest conservation need that include incentives, and incentives will be necessary to implement existing plans by our state agencies, as well as funding. Unfunded mandates are not useful.

That we focus on tools. Conservation measures and frameworks are just that. Rather, we need tools that are tied to outcomes for habitat and ecosystem functions. Land protection, water protection, is just one tool, and it should not be considered the only tool. There are permanent conservation mechanisms, semi-permanent conservation mechanisms, including leasing and fouling, things that have sunset clauses. Those collaborative managements, based on state, tribal, regional, community-based science-driven and input-driven approaches will allow us to conserve habitat and ecosystem function.

I think this is maybe my favorite, but there are opportunities

ahead. The Thirty by Thirty conservation framework, rather than being a punitive loss of space or use, should prioritize intact, high-quality habitats and communities and their uses, especially when those uses are vulnerable to loss, fragmentation, degradation, and we should be considering connectivity of those landscapes and waters to enhance the resilience of fish to climate variability. This will allow us to fish into the future.

I hope some of these points we may include in our letter, so that we may allow the sustainable use of fish to provide food, to provide jobs, to provide economic sustainability for our region.

MARCOS HANKE: Thank you very much, Nicole. You complement all the previous comments, some new and some more elaborate, which is great, and we have Julian.

MIGUEL ROLON: Marcos, before Julian, Nicole, can you send us an email with that letter, so that we can use it for the draft letter that we are going to prepare for the committee?

NICOLE ANGELI: Yes, of course.

MIGUEL ROLON: Thank you.

MARCOS HANKE: Julian.

JULIAN MAGRAS: Julian Magras, for the record, DAP Chair, St. Thomas/St. John. I am thankful for this great opportunity for us to get our points across. I totally agree with my counterpart, Nelson, and Marcos Hanke, as both fishermen, and their great concerns of actually what's been taking place for all these years, actually, on the land that ends up in the ocean, where we suffer on a regular basis.

What I see is taking place here is very, very similar to what has been identified in the making of the eco-based management plans, where, in our case, we have identified thirteen top issues that are affecting our ecosystem, and there are so many plans in place to try to protect the ecosystems already, but they are not being followed, and, most importantly, they are not being enforced.

Enforcement is a big issue, and we continue to turn a blind eye to enforcing the people who have been breaking the laws that are affecting the fisheries. The only one that seems to be affected, 99.9 percent of the time, are the fishermen.

Back in 2004 and 2005, we did a 30 percent reduction, through the Sustainable Fisheries Act, to protect the fisheries, and, here

again, we are looking at another 30 percent, which I can't see us taking any more closures or any more rules and regulations. I think what needs to come out from this Executive Order is from the higher level, Sam Rauch and above, is how do we get the local government to actually do their job and correct the issues at-hand, you know, coastal runoff, the sewage being dumped directly into the ocean, and this is raw sewage, and don't even talk about the oil.

You know, we have the bay area, where the levels of toxins are so high. You know, if we start by picking a few of these areas and correcting them, that would be more than a 30 percent reduction, instead of maybe looking at new areas to protect. We have St. John, where we have the national park, which they have most of the land there, and I could be incorrect, but I say 50 percent or more, and we also have the coral reef monument.

I think there are a lot of measures out there already, and, somehow, the higher powers that be need to find a way to enforce and get these people to do their jobs and don't leave it to come down where it's going to affect the commercial fishers and the recreational fishers, and we are a socioeconomic community.

I want to put that out there, and, this committee that's being formed, with the local entities from both areas and Mr. Chair Hanke, I don't know if it's possible to include the DAP chairs on this committee, yes or no, and I will leave that to Miguel and the team, but those are my comments. Thank you.

MIGUEL ROLON: To that point, Mr. Chairman?

MARCOS HANKE: Yes. Go ahead, Miguel.

MIGUEL ROLON: The committee is to draft the letter, but all the chairs will have a chance to look at the letter and make comments. The reason we have a small group is to be able to write it so that everybody will have a chance to see it, and so all the chairs will be able to look at the draft letter and make comments, and, once we receive the input from everybody, we will go ahead and send a letter to the appropriate -- In this case, it will be NOAA Fisheries, but let's -- Be sure that you are going to be contacted for this letter.

MARCOS HANKE: Correct. It's a very inclusive process, because we want to hear everybody that has something to say that is important to put in that letter. That will be the case, Julian. Sam, do you have anything else to say, to share with the group?

SAM RAUCH: Let me first of all thank you for your thoughtful comments on this. In advance of receiving the letter, the discussion here has been very helpful to listen in on, and I want to reiterate what I said at the outset, that a lot of these issues are not new for the councils.

The councils do look at resiliency, and they do try to figure out how to manage to make sure that the resources we have are sustainable, through a wide variety of environmental changes, including climate change, and I know this is something that is important to the Caribbean Council, and so I do look forward to that. Thank you very much for the input that you've given us and the input that you're going to give us. It will be very helpful. Thank you.

MARCOS HANKE: Thank you, Sam. Before we close, I want to use the comments that Julian made, and I think, someway and somehow, the government, at the upper level, should facilitate, or coordinate, the connection between the agencies, federal and local, to make the whole system of marine protection and land protection, to work it better, because, right now, they seem to be disconnected. That's another recommendation, or a comment, that I am making. Thank you very much, Sam. Miguel, let me know if you need to close the meeting now and go for a break, or we can leave it open, or how do we do it?

MIGUEL ROLON: No, and the listening session is really NMFS' session, and so Sam will say thank you, and we will close it. Your comments are contained in the letter that Nicole Angeli just read, and so they will be part of the letter that the council is going to prepare. The question is really for Sam. Can we close the listening session at this time?

SAM RAUCH: If we feel that we've got all the input that we're going to get from the council, I think we can close the listening session with my thanks for all of your participation.

MARCOS HANKE: Thank you very much. The listening session is closed now, and we're going to go to a break for five minutes and come back.

MIGUEL ROLON: Okay. Sam, I'm sorry that you are not able to go on a boat with Marcos again, but I hope to see you next time, COVID free, so that you can visit the Caribbean again. Thank you a lot.

SAM RAUCH: Soon. Soon that will happen.

MIGUEL ROLON: Mr. Chairman, five minutes, and we will come back

at --

MARCOS HANKE: 3:51. I will see you guys back at 3:51.

MIGUEL ROLON: Thank you.

(Whereupon, a brief recess was taken.)

MARCOS HANKE: Welcome, everyone. We are back in business. It's 3:51. Like I said, very sharp at 3:51, and we're restarting the meeting, and the next item on the agenda is the public comment from 4:00 to 4:15. Miguel, do we have to wait for 4:00 specifically? Maybe Jocelyn can let me know about that.

MIGUEL ROLON: Marcos, it's not public comment now. We need to finish what we started with Dr. Duval.

MARCOS HANKE: Yes, let's --

MIGUEL ROLON: That will be the last presentation today.

MARCOS HANKE: Yes. Let's do Dr. Duval's presentation then, and then we will go to public comment, and, people from the public that want to comment, please stay connected, because we really want to hear what you have to say. Dr. Duval, go ahead.

CFMC FIVE-YEAR STRATEGIC PLAN (CONT.)

MICHELLE DUVAL: Thank you, Mr. Chairman. You all selected a draft vision and draft mission statement, and so next are the different goal themes and moving on to management, and so these were the three different management goal alternatives for your consideration, and, as Miguel has suggested, select one of these, and we will incorporate this into the full draft that you will see in July.

MARCOS HANKE: I will give a few seconds for people to read it again and to reengage in the discussion.

MICHELLE DUVAL: Again, I will just -- Maybe I can just highlight that these -- That the management alternatives were really -- These are based on overlap in the goals from the island-based FMPs that pertain to management, and so that was the basis for these different alternatives, and these cover a variety of themes, such as managing within local ecosystem limits, ensuring continued health of fishery resources, providing for sustained community participation, fostering territorial and federal collaboration, things of that nature, and so that's what these three alternatives

are meant to encompass. I am happy to read them again, but I thought perhaps other folks could read them on the screen and provide some thoughts.

MARCOS HANKE: Just to make sure, and I'm sorry to ask again, but we have to choose one, correct?

MICHELLE DUVAL: Correct. That's correct, and so that will be your draft alternative.

MARCOS HANKE: Yes, and, again, I like the middle one, the second one on the list. I would like to hear the comments from the rest of the group.

TONY BLANCHARD: I think the last management goal alternative is the one that I believe works best, the advanced management approaches that provide healthy local fisheries and ecosystems and consider the needs of island fishing communities and foster collaboration among management partners, and I think that is my choice, and I think it's the best choice. I think it takes into consideration all the things that we look for, or at least I look for.

MARCOS HANKE: Okay. It looks like Damaris agrees with Tony. Anybody else?

CARLOS FARCHETTE: I agree with Tony.

MARCOS HANKE: Then anybody else? Well, I don't have any problem to change my -- I get his point, and the rest of the people, and I agree on the third bullet. The third bullet, Michelle.

MICHELLE DUVAL: Okay. Thank you, Mr. Chairman. Let's move on to the next, which is the ecosystem and resource health goal alternatives, and so, again, these were meant to encapsulate common themes across the goals of all three of the island-based FMPs, such as ensuring continued provision of ecosystem services, managing within the limits of local ecosystem production, ensuring the continued health of fishery resources, and, also, this is a goal that will encompass your work on the fishery ecosystem plan.

MARCOS HANKE: I am going to follow-up in the same line, and I am going to pick one, so people agree or disagree with me, just to move the discussion, and I pick the middle one, to promote sustainable utilization. Any comments? Is anyone in opposition?

CARLOS FARCHETTE: I agree with you, Marcos. The middle one.

MARCOS HANKE: Okay. Hearing no opposition, and the agreement of Carlos, the middle one, the promote sustainable utilization.

MICHELLE DUVAL: All right. Thank you, Mr. Chairman. We have just two more. This is the social, cultural, and economic goal statement alternatives, and, again, some of the common goals and themes from the island-based fishery management plans were providing for the sustained participation of communities, minimizing adverse impacts on those communities, promoting fair and equitable resource use, recognizing differences in the local environment, culture, user groups, and things like that.

MARCOS HANKE: Anybody else who would like to comment? I just saw Damaris, in the chat, said Number 1, and I am in agreement with her. Does anybody else want to comment?

CARLOS FARCHETTE: I agree with Number 1, because it shows the unique characteristics of each island fishing community.

MARCOS HANKE: Okay. Any opposition to that? Hearing none, that's the one.

TONY BLANCHARD: Give me a minute to pull these up.

MARCOS HANKE: No problem. We will wait for you.

TONY BLANCHARD: (Mr. Blanchard's comment is not audible on the recording.)

MARCOS HANKE: Tony, we cannot hear you. Put it in the chat, please.

TONY BLANCHARD: I was trying to say what is the different between Alternative 1 and Alternative 3? What is the difference between them, if you could explain that to me. This is a question for Ms. Duval.

MICHELLE DUVAL: Thank you, Tony. I think, really, the difference between Alternative 1 and Alternative 3 is which piece of the statement comes first, and so, in Alternative 1, it's ensuring that management -- It puts the unique characteristics and needs of island fishing communities sort of in front of the fair and equitable resource use, and then the last alternative puts the promoting fair and equitable resource use in front of unique social, cultural, and economic characteristics of the fishing communities.

The third alternative also expands on what those unique

characteristics are, by calling out social, cultural, and economic characteristics. The first alternative just uses the blanket phrase of "unique characteristics and needs of island fishing communities".

MARCOS HANKE: Tony, we are waiting for you.

TONY BLANCHARD: I will support Alternative 1.

MARCOS HANKE: Thank you, Tony. Is there any other member in opposition? Hearing none, Alternative 1, the first one on the list.

MICHELLE DUVAL: Okay, Mr. Chairman. This is the last one, and then you all can go to public comment, and so these are the communication and outreach goal alternatives, and so, again, these were focused on some of the themes that came out of the input that the council and the district advisory panels and the O&E AP provided about trying to encompass things like promoting public understanding and promoting participation and focusing on a diversity of tools and engaging audiences and educating those audiences, and so each one of these alternatives tries to incorporate all of those things.

MARCOS HANKE: Just to start the discussion, I prefer the Number 2. Anybody else?

CARLOS FARCHETTE: I agree with Marcos on Number 2. Engaging is important.

MICHELLE DUVAL: I see that Damaris said, in the chat, either 2 or 3.

TONY BLANCHARD: I will support Number 2.

MARCOS HANKE: Thank you, Tony. Is there anybody in opposition? Hearing none, Number 2 it is.

MICHELLE DUVAL: All right, Mr. Chairman. Thank you very much, and thank you, council members. I really appreciate it, and I'm looking forward to -- Well, first of all, I'm looking forward to engaging with the DAPs and the O&E AP, hopefully in mid-June, I think were the dates that we settled on, and then a full presentation of the draft to the council in July for approval for some public review and comment. Thank you.

MIGUEL ROLON: Mr. Chairman, that will be July 21.

MARCOS HANKE: July 21. Okay. Dr. Duval, thank you very much. Like always, a great presentation, and it was very clear, and you are very organized and easy to deal with over the computer, and you make my life very, very easy. Thank you very much.

MICHELLE DUVAL: Thank you, Mr. Chairman.

MARCOS HANKE: The next item on the agenda is the public comment. Is there anybody from the public that would like to have a five-minute period?

CARLOS FARCHETTE: I'm not from the public, but I would like to get a chance to say something, when I get a chance.

MARCOS HANKE: Go ahead, Carlos.

CARLOS FARCHETTE: I kind of noticed that this morning was a mad rush, and I remember, in the December meeting, when Blanchard mentioned the same thing, about rushing through agendas, and I am wondering if maybe the council, when they have such a heavy load on the agenda, would consider maybe a two-and-a-half-day or a three-day council meeting, so that -- I think a lot of input was missed this morning, and no one got a chance to participate, because of how tight the schedule was. That's it.

MARCOS HANKE: Thank you, Carlos, for saying that, and running the meeting was very, very tight, and I agree with you that we lost some opportunity of learning more and using the resources that we have available to us, and I totally agree with you that it's something that, in some cases, we should explore that opportunity. Anybody else? From the public, is there anybody else to connect from the public? Does anybody else want to make a comment at this time?

TONY BLANCHARD: I would like to make a comment, Marcos.

MARCOS HANKE: Go ahead, Tony.

TONY BLANCHARD: I agree with Carlos. I thought that we were -- It was a very heavy agenda, and I think -- (Part of Mr. Blanchard's comment is not audible on the recording.) I think there were times that we weren't able to discuss, because of trying to meet a timeline, and that's -- Being on a computer, and not being face-to-face, and we can't have a conversation, in my opinion, and I'm not a computer person, and I feel a little out of the water dealing with the meeting this way, and I don't think that I'm the only one, and I don't believe Carlos is the only one either, and so that's just my -- We need to break down this and lighten up on the

agenda, and that's what I've --

MARCOS HANKE: Thank you, Tony. For sure, we have to explore maybe a little more time, like Carlos said, or do less on the agenda. I think there were many important opportunities today to get informed, and we got a lot of information, but the comments are well noted. Thank you very much for both. We have a closed session coming up. Miguel, do you want to make any final observations?

MIGUEL ROLON: Observations of what?

MARCOS HANKE: If you don't have any other comments, we're going to adjourn the meeting, but not before saying that we moved the DAP reports for tomorrow. Miguel, can you help me with which time, again, we're going to accommodate the DAP tomorrow?

MIGUEL ROLON: Tomorrow, we have, at 8:30, the presentation by Dr. Shervette, and that will be fifteen minutes. By the way, talking about the timing of the agenda, that's okay if we spend the time, but, most of the time, there are only two council members talking, and the rest of you are silent doing nothing, and it's very difficult to move the agenda.

If it wasn't because Tony is there, and Marcos, and the other guys are quiet, and so we can have one hour for one discussion, but, if everybody keeps quiet, we don't go anywhere. Anyway, I would like to thank Tony, especially, with all the audio issues that they have, and he was able to move with Carlos Farchette, and, for that, we are grateful.

Tomorrow, we can accommodate the presentation of the DAPs. They were put together by Graciela and Liajay, and so, right after Dr. Shervette's presentation, we can have the presentation by the DAPs, and then you can move the rest of the agenda accordingly.

MARCOS HANKE: Okay. Let's do that then, and, right now, it's 4:09 p.m., and thank you very much for everybody that attended the meeting. Thank you for being kind to the Chairman and to all the staff, and I want to say a big thanks to the staff for all the support that we have to organize the meeting. Thank you, everybody, and the meeting is adjourned. We have a closed session coming up at 4:30 p.m.

(Whereupon, the meeting went into closed session on April 27, 2021.)

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APRIL 28, 2021

WEDNESDAY MORNING SESSION

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The Caribbean Fishery Management Council reconvened via webinar on Wednesday morning, April 28, 2021, and was called to order at 8:30 o'clock a.m. by Chairman Marcos Hanke.

MARCOS HANKE: Good morning, everyone. It's 8:30 a.m. on Wednesday, April 28, 2021. This is the CFMC Virtual Meeting 173rd, and we are going to start the meeting this morning. The rules of conduct are the same as yesterday, and we're going to start with the roll call. Christina or Liajay, can you help us out, please?

LIAJAY RIVERA: I will do the roll call. Good morning. I will do the roll call, and I will start with myself, Liajay Rivera, Miguel, Rolon, Virginia Shervette, Christina Olan, Marcos Hanke, Andy Strelcheck, Alida Ortiz, Angie de los Irizarry, Carlos Farchette, Damaris Delgado, Diana, Edward Schuster, Guillermo Cordero, Helena Antoun, Iris Oliveras, Jack McGovern, Jesus Rivera, Jocelyn D'Ambrosio, Jose Rivera, Julian Magras, Kevin McCarthy, Maria Lopez, Michelle Duval, Nancie Cummings, Nelson Crespo, Nicole Angeli, Rich Appeldoorn, Robert Copeland, Sarah Stephenson, Sennai Habtes, Shannon Calay, Stephanie Martinez-Rivera, Vanessa Ramirez, Wilson Santiago, Yaritza Rodriguez. Those are all in my participant list.

MARCOS HANKE: Thank you very much, Liajay. Is there anybody that is not on this list, please send it through the chat, and Liajay and myself can recognize your presence. After the roll call, we're going to address the SSC and the panel appointments. Miguel, are you there?

MIGUEL ROLON: No, the first thing today is a presentation by Dr. Shervette.

MARCOS HANKE: Yes. I'm sorry. Dr. Shervette, let's start with your presentation. Like we announced on the first day, for the agenda, we added your presentation. Go ahead.

LANE SNAPPER: FILLING IN CRITICAL GAPS FOR LIFE HISTORY IN U.S. CARIBBEAN WATERS

VIRGINIA SHERVETTE: Thank you so much for giving me the chance to briefly talk to you about this request for support from the council

on lane snapper and filling in critical gaps for life history parameters across the U.S. Caribbean.

This work is in collaboration with the local fishing communities and with resource agency personnel in the Caribbean, and we hope to also discuss with Angela working together with her people in the Virgin Islands, in order to obtain samples and just get this critical information for a species that is upcoming for an assessment.

Basically, I wanted to just emphasize, initially, sort of some of the justifications as to why we need to support research like this, and also why our team of collaborative researchers, natural resource management agency personnel, anyone in the fishing community that we can work with. We're super qualified to do this work and uniquely positioned to do it.

The tentative assessment calendar for SEDAR species for the Caribbean is something that we have been keeping an eye on, and we've been trying to target and focus a lot of our life history research geared towards addressing sampling needs for those species. Queen triggerfish is the one that's being assessed right now, and we have extensive experience doing life history work, and we've been successful in getting multiple federal grants to fund this work, and we've published on our findings, as we get to the point where we have the data to publish.

Our sample numbers are solid, are very robust, for all of the species. Queen triggerfish, like I said, is right now, and redtail parrotfish is supposed to be assessed in 2023, and we've been working on that species, with the assistance of federal funding. Queen snapper has been listed consistently for the past ten years, at least, on those federal national calls for funding proposals, for research proposals, as a priority species. We currently have a proposal under review that includes filling critical gaps for life history for queen snapper.

Yellowtail snapper is another species that we've been working on and have funding to do so, and hogfish as well. The one species that is listed for assessment that we do not have federal support right now for, and has not been listed as a priority species on those federal calls for proposals, is lane snapper.

In spite of that, we worked very closely with local fishers in the Virgin Islands and in Puerto Rico to get some preliminary samples for lane snapper, so that we could get some preliminary data, but now we are at the point where we really need some funding in order to get the sample numbers that we need and that are needed for a

robust stock assessment to be successful.

More justification as to why this kind of research on lane snapper and then, in the future, mutton snapper is super important, and regulations in federal waters in the Virgin Islands and Puerto Rico -- Both of these species have annual closures in federal waters from the 1st of April, as you know, through the 30th of June. Then, in territorial waters, in the Virgin Islands, lane snapper and mutton snapper both also have a closure from the 1st of April to 30 June.

For Puerto Rico, in territorial waters, mutton snapper has the closure from the 1st of April through 31 May, and so, as species that are being regulated with these closures -- Again, it's super important, in order to evaluate the effectiveness of regulations, such as closures like these, and so life history data and filling in these gaps for these life history parameters is super important, in order to evaluate these regulations, the effectiveness of these regulations.

What we are proposing currently is that the council support an investigation on lane snapper life history. Like I said, the reasons and justification are that it's upcoming assessment species, and we cannot complete a stock assessment without this critical life history data for U.S. Caribbean waters.

We have those federal and territorial seasonal closures for lane snapper, and then there is -- Other than those 200 samples that we have already collected and are working on, there is no age and growth information for the U.S. Caribbean populations of lane snapper at this point, and so age and growth are super important as part of those life history parameters.

I do have some information that I can show you, if there's questions on some reproductive work that's been done in the past, but that was just for Puerto Rico, and so there is also a lack of reproductive biology information on lane snapper from the Virgin Islands, and so, again, these data are essential, and they're needed in order to be able to conduct a stock assessment and in order to evaluate regulations and so on. With the council's support, these critical data gaps can be filled for lane snapper.

The objectives of this study are pretty straightforward, and it's basically to determine and compare growth rates and population age structure and sex ratios in and among multiple areas in Caribbean waters and to determine and compare reproductive seasonality, size, and age-at-maturity in and among multiple areas in U.S. Caribbean waters.

These are my standard objectives for all the species that we've been working on, and so that's why "transition" is in there, because parrotfish and hogfish work we've been doing as well, but that doesn't apply, clearly, to lane snapper.

A summary of our preliminary collections, like I said, we have been investing, personally, our time and some money into obtaining these preliminary samples, so that we get some basic data, so that we can demonstrate that we can do this and also justify the funding.

We have samples from Puerto Rico starting back in 2014 that we've just opportunistically collected, and then we also have been working with the St. Thomas Fishermen's Association on obtaining samples from the Virgin Islands, opportunistically, for this age, growth, and reproductive biology work.

Clearly we need both fishery-dependent and fishery-independent samples, and we also need samples from across all the months, and that's because of the reproductive seasonality component, and so we hope to be able to accomplish that, the collection of both fishery-dependent and fishery-independent samples, for the Virgin Islands and Puerto Rico, so that we have this data for all three management platforms.

I just have, up here, some information about the cost to do this. Because we are already working and have funding to do collections for other species, that makes it so that we can also include lane snapper sampling, and so we have this ability, right now, at this point in time, to leverage time that we spend on other species, just expanding it to lane snapper.

We're requesting funding for just a couple of trips for collecting in the Virgin Islands, and we'll also collect other months, through our other -- We have funding for travel from our other grants to cover the other months. We also need to purchase fishery-dependent samples as well, and so we've got money in the budget for that.

Then our fishery-independent sampling in Puerto Rico is included in some yellowtail snapper work that we're doing, and so we'll be able to leverage those funds towards also getting lane snapper samples, and so we also have budgeted a little bit for some of the research, field, and lab supplies. Then, of course, we need funding to support personnel that are focusing on working up these lane snapper samples.

The total direct cost for this research is a little bit under

$60,000. Again, if we were doing this study alone, without already being involved and have funding for working up samples from an assortment of species, then this would probably cost double, but, because we can leverage those funds and our time, we're able to do this and ask for less than $60,000, and then the university process funding has an indirect cost rate that is actually a lot higher than 10 percent, but we've gotten them waive it at the University of South Carolina, to waive the bulk of it.

This work will also contribute to capacity building in the Caribbean, in the U.S. Caribbean, and I can go into detail about this with you, if you have questions about it, but we're working -- This research is collaborative, and we're working closely with the fishing community and with local scientists and with local resource management agencies, and so all sorts of capacity building is occurring as part of this.

Then hopefully this will be successful and, in the future, we can work towards filling in gaps for additional species that have been identified by the local fishing communities, such as mutton snapper, as a priority for life history research. Mutton snapper, we've been also opportunistically sampling up to this point, and so we do have preliminary data for that species as well.

Then just to note that we are hoping to work closely with the SEAMAP sampling efforts for lane snapper and any other species for fishery-independent samples, and so that's been, in the past, a great collaborative interaction, and so we hope to continue that throughout any of this future work that we hope to be able to complete.

I just wanted to get through that, in case there were questions, and I know that the schedule is packed, but thank you again for listening to us and letting me request this.

MARCOS HANKE: Thank you, Virginia, for a great presentation. I would like to hear from the council, but first from Miguel, on the possibility of how this could work, Miguel, in terms of if the council decides to support this effort.

MIGUEL ROLON: Okay. Thank you, Mr. Chairman. This is an unsolicited proposal to the council, and it's a technical term meaning that we were not looking for it. However, we were in contact with Dr. Shervette and asked her to have this presentation.

The administrative funding of the council is not programmatic, meaning that we do not budget for scientific studies, et cetera, at the beginning of each cycle of the budget. However, whenever

we identify monies that are not obligated in the previous year, we can set aside some funds for special projects like this, let's say in the first quarter of each year, and we believe that, Angie and I, that we can identify some funding, and we discussed with the Chair, with you, and it is possible to fund this project, subject to approval from the Grants Officer.

In this case, we need to prepare a source and submit it for approval. We do not foresee a major problem. However, we want to do that. From our point of view, and Graciela and I have been discussing this before, this is the type of project that we would like to pursue, now and in the future, because it's a giant project, between the United States Virgin Islands and Puerto Rico.

The Fisheries Research Laboratory and Dr. Shervette's unit are working together, and this is for the lane snapper, but, in the future, maybe we can add other species that the SSC has identified that we need life history parameters for, for stock assessment and other studies that we have to work with in the council, but it will be up to the council to approve it, and that has to be by a motion.

MARCOS HANKE: Thank you, Miguel. I would like to hear from the council members. I have Julian pending to speak, but, Julian, just give me a chance to hear from the council members first, and I will give you a turn right away. Do any council members have any comments about this possibility?

CARLOS FARCHETTE: I am in full support of funding this lane snapper life history for the U.S. Caribbean. I think it's an important species for all three platforms, and it's a species, to be honest with you, that I don't see much of in the markets, when I'm talking to fishers, and so I think it's important to get that information, and so I support it, and I'm willing to make a motion, whenever you're ready.

MIGUEL ROLON: Marcos, it's not Julian asking for a turn. It's Tony. He is with Julian.

MARCOS HANKE: I'm sorry. I really want to hear both. I really want the opinion of both.

MIGUEL ROLON: So, after Carlos, it's Tony's turn.

MARCOS HANKE: Okay. I am passing it now to Tony.

TONY BLANCHARD: Good morning. I am on the same page with Carlos. I think that we need to support this study, because we have a

seasonal closure on this fish, and we really have no data on it, as for age and everything else that comes into play, and so I think it's a good study to support, and I think we should support it, even if it's for the mere fact that we have closed seasons on it and we have limited information, and so that's my take.

MARCOS HANKE: Thank you, Tony. Anybody else from the council that would like to speak?

VANESSA RAMIREZ: I will also support this kind of study. In the west area, we really get a lot of lane snapper, and so I think it's one of the best ideas to study and get more information from the fishermen about this species.

In this area, it's really commercial in our fish markets, and I can say that, for example, at this time, we have been getting the lane snapper up to two and two-and-a-half pounds, and so that's big for this area. We usually get them really small, but we are seeing, during these days, that they are more bigger and, of course, they are also reproducing smaller, or at least like half-pound fishes are already in reproduction, and so I think it's going to be a great idea to support these kind of studies. Thanks.

MARCOS HANKE: Thank you, Vanessa. I have Julian, Clay, and Andy in the queue. Julian.

JULIAN MAGRAS: Good morning, everyone. I am glad to see that this proposal is here on the table. This is one of the species that the fishermen have been asking for, to get some studies done, because of the seasonal closures that have been in effect from 2005.

The lane and mutton snapper, to start off with, is going to be very, very important and very good for us to get the information on what's actually going on in this fishery, and so great presentation, and I am looking forward to the council's full support in funding this project.

It's the beginning of the projects that we would like to see continuing over the years to come, is getting all the information that's needed to study the different stocks, so we can be prepared when we go into the SEDAR process. Thank you.

MARCOS HANKE: Thank you, Julian. Clay.

CLAY PORCH: Following up on Julian's comment, I believe you have a project for queen triggerfish, and SEDAR 80 is actually waiting for that project to be completed, so we can conduct that

assessment, and so I'm wondering if you could give us an update on the progress of queen trigger, and then I wonder, if we embark on this project, is that going to slow down the queen trigger work?

MARCOS HANKE: Virginia.

VIRGINIA SHERVETTE: Thanks for the question, Clay. We are rapidly progressing with the ageing component of queen triggerfish, and so that was the holdup. We wanted to validate that otoliths would provide effective age estimates, and we were able to get a grant to fund age validation work, using bomb radiocarbon.

We just got that work published, and we found out this week that it was officially in press, and so that also enabled us to compare the estimates of the dorsal spines, which, in the past, have been the way to age triggerfish, and our ageing validation work actually demonstrated that those age estimates from the dorsal spine are not reliable.

Because we are trying to get through all of that, now we have that justification to use the otoliths, and we just have to finish ageing the otoliths. Our plan that we presented at the SEDAR meeting was to have all of the age estimates for two-thousand-plus samples ready for the assessment needs by the end of the summer, and so this will not interfere with that, because we wouldn't start sampling until that was complete.

MARCOS HANKE: Thank you, Virginia. Clay, do you have a follow-up?

CLAY PORCH: No. Thank you.

MARCOS HANKE: Thank you. Andy.

ANDY STRELCHECK: Thank you for the presentation. You might have stated this, and I missed it, and I am supportive of data collection like this, and obviously improving information to inform stock assessments.

I also have seen projects kind of go awry based on collecting the data, and then we can't use them in stock assessments, and so can you speak to any kind of coordination that has happened with the Science Center and others with regard to your proposal? I just want to make sure that, if we approve this going forward, that it's easily used, obviously, for future scientific needs.

VIRGINIA SHERVETTE: Good question. Yes, and so, as I mentioned, we've been successful in publishing a lot of our past research

that's very similar to this in the U.S. Caribbean on age, growth, and reproductive biology. We have another paper that just was accepted and is now in press on one of the parrotfish species, for example, and so, for peer review, we've got backing.

We also have oversight by Nancie Cummings on multiple of our grants, and we have collaborative-funded proposals, again, with NOAA personnel, and we are in communication with Rich Appeldoorn from the council, concerning whatever the statistics committee needs or sees that we need to do differently, for example, and I don't know, but we are keeping that in mind.

We know that some things fizzle. We do not have a record of that though, and so we have actually been very successful, and we continue to be successful, and we continue to work our butts off to get the data that needs to be gotten in a scientifically-sound way, and I don't see that changing.

MARCOS HANKE: Thank you, Virginia. I just received Damaris's full support through the chat. I just wanted to be on record for this project. Anybody else?

NELSON CRESPO: I want to bring my support to this project. This is the type of project that we want to see, because these species are going to help to reduce the pressure on other fisheries from the snappers, and that's the type of fish that restaurants with low budgets want to keep to be in business, and it's a really good project.

MARCOS HANKE: Thank you very much. Because of the time, I think we have a very clear record of the support, but we need a motion. Carlos offered to make a motion. Carlos Farchette.

CARLOS FARCHETTE: Thank you, Mr. Chair. **My motion is to allocate funding for conducting life history information for lane snapper in the U.S. Caribbean.**

MIGUEL ROLON: As presented by Dr. Virginia Shervette today.

CARLOS FARCHETTE: Yes. **As presented by Dr. Virginia Shervette today.**

MARCOS HANKE: Thank you very much. The add-on of the language is accepted by Carlos. Is there any second?

VANESSA RAMIREZ: Second.

MARCOS HANKE: Okay. Thank you, Vanessa. **Is there any opposition**

to this motion or abstentions? Hearing none, the motion carries. Thank you very much to all, and we can continue with the meeting. Next is the SSC and the panel appointments. Miguel.

SSC AND PANEL APPOINTMENTS

MIGUEL ROLON: Thank you, Mr. Chairman. The council met in closed session yesterday evening, and we have some recommendations for you today. The first one -- I will start with Puerto Rico, and the first one is to declare the position of Mr. Jesse Rivera and Gary Engstrom vacant, due to their absences in two or more meetings without any excuse and to appoint Mr. Joel Gonzalez to the DAP Puerto Rico, and so you can have two motions or one motion, in the case of Puerto Rico.

MARCOS HANKE: We need a motion from the council members.

TONY BLANCHARD: So moved.

MARCOS HANKE: Any second?

DAMARIS DELGADO: Second.

MARCOS HANKE: Damaris seconds. **Any opposition? Is there anybody that would like to abstain? Hearing none, the motion carries.** Miguel.

MIGUEL ROLON: Thank you, Mr. Chairman. The next one is the St. Thomas/St. John District Advisory Panel. We have a recommendation to appoint Joshua Quetel as a new member of the DAP St. Thomas/St. John.

MARCOS HANKE: We need a motion for that.

TONY BLANCHARD: So moved.

MARCOS HANKE: Do we have a second?

CARLOS FARCHETTE: Second.

MARCOS HANKE: Thank you, Carlos. **Is there anybody in opposition? Any abstentions? Hearing none, the motion carries.**

MIGUEL ROLON: Okay. The next one is to reappoint all the rest of the members of the DAP St. Thomas/St. John, DAP Puerto Rico, and DAP St. Croix and all the O&E AP, the Outreach and Education Advisory Panel.

MARCOS HANKE: Do we have a motion, please?

TONY BLANCHARD: So moved.

MARCOS HANKE: Do we have a second?

CARLOS FARCHETTE: Second.

MARCOS HANKE: Any opposition? Any abstentions? Hearing none, the motion carries.

MIGUEL ROLON: Mr. Chairman, then, with the SSC, we have to reappoint Dr. Jason Cope, subject to his acceptance, and we sent him a note that he is being appointed for another term on the SSC.

MARCOS HANKE: Do we have a motion?

CARLOS FARCHETTE: So moved.

MARCOS HANKE: Is there a second, please?

TONY BLANCHARD: Second.

MARCOS HANKE: Tony just seconded. The motion was made by Carlos Farchette. **Is there any opposition? Any abstentions? Hearing none, the motion carries.**

MIGUEL ROLON: The last one is to appoint Dr. Todd Gedamke to the vacant position on the SSC.

MARCOS HANKE: Is there a motion?

CARLOS FARCHETTE: So moved. Motion to appoint Todd Gedamke to the vacant position of the SSC.

MARCOS HANKE: Motion by Carlos Farchette. Is there a second?

VANESSA RAMIREZ: Second.

MARCOS HANKE: Any opposition? Any abstentions?

TONY BLANCHARD: I will abstain.

MARCOS HANKE: Thank you, Tony. **The motion carries.**

MIGUEL ROLON: The last motion is to reappoint all the members of the SSC for another term.

MARCOS HANKE: Is there a motion, please?

NICOLE ANGELI: So moved.

MARCOS HANKE: I heard Nicole Angeli with a so moved motion for that. Any second?

CARLOS FARCHETTE: Second.

MARCOS HANKE: We have a second from Carlos Farchette. **Any opposition? Any abstentions? The motion carries.**

DAP REPORTS

MIGUEL ROLON: Then, Mr. Chairman, we moved, from yesterday, we moved the presentations by the three DAP chairs to this morning, and the presentations are around the ecosystem-based model that was presented to them by Dr. Graciela Garcia-Moliner and Liajay Rivera, and Liajay has the presentations.

The DAPs met twice before this meeting, and, at the first one, they incorporated their suggestions and changes, et cetera, to the five-year strategic plan, and that was presented by Dr. Michelle Duval yesterday, and they also, in another meeting, were informed that the island-based FMPs are in the process of being implemented, although the plans were approved last year, and they are in the process of being implemented this year.

Then we have a sort of discussion of the ecosystem model being prepared by the council, and that was presented by Dr. Graciela Garcia-Moliner, and so we would like to -- And Graciela prepared the presentation and the slides for Julian, Nelson, and Eddie to address the council. If you have any suggestions, or if you have any questions for them, this is the time. We are here starting with the presentations, and we can have Julian first, followed by Eddie and then Nelson Crespo, if they are ready.

MARCOS HANKE: Julian, are you there?

ST. THOMAS/ST. JOHN

JULIAN MAGRAS: I am here. Good morning, everyone. Can we put up the St. Thomas screen, please? First off, I would like to say thank you for allowing us the opportunity to be involved in the process of creating our own ecosystem conceptual model. It was quite a task, and it took some time with everyone's involvement. Even though we had some delays that we were not happy about, we were able to still complete this work here on April 19, 2021.

As you can see, we not only did the eco-based, but we started to do a fisheries management plan as well, which it's going to take some more work, and some more time, to eventually complete that one, but we were able to connect a lot of dots.

We had fifty-components in the big model and thirty-three components in the fisheries model, to total eighty-six components. The total paired connections is 160. The top drivers were the sargassum and the impacts to seven components, for example the inshore reefs and recruitment. Then we had education and outreach, and we had the lithium batteries, cruise ship transport, and ballast water.

These here were our top issues that were identified from I would say the very beginning of the process, all the way back when we first started in 2019, and they are enforcement, water quality, education and outreach, heritage and culture, natural disaster response, socioeconomic impacts, essential fish habitats, land-based sources of pollution, coastal management, coral disease, and large vessel impacts.

Now, this might seem like a very long list, but, really and truly, if we were to pick a couple of items out of this list and really get it moving, it would curtail a lot of the other issues that are taking place, and the perfect example of that is enforcement. Enforcement is to keep any regulations that sit out there, and, in all of these areas, we have issues with enforcement. There are a lot of rules and regulations in place, and the enforcement is not happening, and so, at the end of the day, no matter how much rules and regs we put in place, if enforcement doesn't do their part, we're going to end up with failures.

That's one of the key areas that we need to start improving, and another very important area that we have strived on making headway is with the education and outreach. The education and outreach committee for the council has been working very, very hard, and I give a lot of credit to them, because they have been listening to the concerns coming out of our committee, and also listening to the concerns that have been coming from the fishermen and have been working on projects to start to improve the education that is needed to the public, the fishers, everyone involved.

I am really hoping that we can continue to move forward in that direction, move forward ensuring that they have all the tools that are needed to get the job done.

With that said, I would say that everything else here falls under,

like I said before, enforcement, and that's not going to improve these areas unless we get enforcement moving forward, and so the bodies that be, that manage these different areas -- Like I said yesterday, when we speaking with Sam Rauch, is -- (Part of Mr. Magras's comment is not audible on the recording.)

MIGUEL ROLON: Julian, we lost your audio.

MARCOS HANKE: Julian, we cannot hear you. Your audio is off.

JULIAN MAGRAS: Sorry about that. We've got some windy weather over here, and some rainy weather, and so the internet is very poor. Like I was saying, we need to hold people accountable to get the job done. Next slide.

LIAJAY RIVERA: That is the last slide for St. Thomas/St. John.

MIGUEL ROLON: Julian, would you like to summarize? Any thoughts for the next steps?

JULIAN MAGRAS: Like I said, I would like to continue working with the different bodies and the SSC and everyone to finalize our conceptual models, and one thing that troubled me a little bit over the last two meetings that we had, and I heard this yesterday from council members, is the time allotted to keep the meeting.

We really pushed the last two meetings in two hours for each meeting, and I think we need to allow at least another hour, minimum, that we don't have to rush and make sure that we are getting all the information that needs to be carried across, so that the final product would be completed the correct way, and, like I said, I'm looking forward to the upcoming meetings, to finish some of the stuff that didn't get finished, but I support where we are headed, and I would like us to continue working together as a team to accomplish everything that needs to be accomplished. Thank you very much.

MIGUEL ROLON: Thank you, Julian. The staff and the Chair have taken note, and we are going to allow more time and less crowded agendas for the following meetings, and that's a very good point.

MARCOS HANKE: Thank you very much, Julian. The next DAP presentation is St. Croix.

MIGUEL ROLON: Mr. Chairman, you have Tony.

TONY BLANCHARD: Good morning. I don't want to really rehash what Julian had to say, but I think I need to make a couple of points

across the table. Bring back up the St. Thomas presentation.

MIGUEL ROLON: It's on the screen.

TONY BLANCHARD: Let's start with enforcement. Just like Julian said, a lot of this can be taken care of with enforcing the rules and regs we have on the books already. The only problem is, when I mention this, it seems to be that the only rules and regs applies to the commercial fisher, and I don't know if it's because he's the guy with the license, or he is the most obvious, but I will give a perfect example of something that has nothing to do with catching fish.

Some of the people that have coming here, especially since the pandemic and before, they anchor in the grass beds, and they don't go to flush out their tanks on a regular basis, and so where do you think they're flushing their sewage tanks? There is ways to track this, if you just keep a log, and, when enforcement comes in to you, you could prove that you actually went to a pump-out station and pumped out your sewage, instead of pumping it out on the grass beds or on the reef.

Like I said, it seems like when I mention enforcement, because some of us mentioned enforcement, the enforcement only comes in for the commercial fisher, and this should be across-the-board, whether you're commercial or recreational or you're in violation of a regulation, especially on the water, and that would take care of some of this water quality that we're talking about, along with probably other stuff that we have here on this list, and so that's just my quick take on it, not that I wanted to rehash all of what Mr. Magras just stated.

MARCOS HANKE: Thank you, Tony. Is there anybody else in the queue that I am not seeing here? Hearing none, the next presentation.

PUERTO RICO

NELSON CRESPO: Good morning, everyone. At the last meeting, there were only a few topics left to discuss, which we did it in a short time, and so we ended up with sixty-two components and 127 paired connections.

The top drivers are the integrity of marine habitats, the effective management, the current intensity, the pollution, and hurricanes. Like Julian said, all of those top drivers, in one way or another, have to be worked with enforcement. Without it, all of those issues cannot be attended to properly, and so that's what I've got for the moment.

MIGUEL ROLON: Any questions for Nelson?

MARCOS HANKE: Any questions for Nelson? Hearing none --

ANDY STRELCHECK: I have a question.

MARCOS HANKE: Andy, go ahead.

ANDY STRELCHECK: Can you speak a little more specifically to the effective management? I see that there's kind of five connections identified there, and what specifically would be ways to make management more effective, as recommended by the DAP?

NELSON CRESPO: When we say effective management, all the management that is implemented are not going to work without enforcement, without -- We need to develop a rich program to reach effective management, because that is one of the biggest discussions that we have here. No enforcement, if you implement management, is not going to work, and the committee doesn't know how it has worked, and it's not going to work. That's all the main topics that we have there.

MIGUEL ROLON: Mr. Chairman, to Andy's question, with effective management, we are looking at coordination between local and federal entities that do the management, enforcement, outreach and education, and engagement of the fishers at all levels of management, similar to what we do at the council, and those were the recommendations and the issues that they discussed.

MARCOS HANKE: Thank you for your question, Andy. Any other questions?

MIGUEL ROLON: I have here Richard Appeldoorn in the chat, and he asks what is current intensity? Is that fishing pressure? I believe that we are talking about -- Nelson, can you answer that one?

NELSON CRESPO: The current intensity is when we develop -- Especially when we develop our fishing work, it's against our work, and nobody can work with high current intensity, especially in the west coast of Puerto Rico, and we suffer because of high currents in the water, and so that's -- To keep doing our work, and that's, indirectly, going to help the fisheries to be protected.

MIGUEL ROLON: So current intensity means they are addressing ocean currents and not fishing pressure at this time. That's the meaning of the phrase.

MARCOS HANKE: Thank you for the clarification, Miguel. Any other questions? Is there anybody in the queue? Hearing none, we can move on with the agenda. The next presentation is the overview of aquaculture.

MIGUEL ROLON: No, we have St. Croix.

MARCOS HANKE: I'm sorry. The next one is St. Croix. Go ahead.

ST. CROIX

EDWARD SCHUSTER: Good morning. Edward Schuster, DAP Chair, St. Croix. On April 19, we went back over our conceptual model, and the green arrows indicate what we polished up on this. As you take a look at it, it's very complex. We had a total of forty-six components, and total paired connections were 233.

The top drivers were the need for education and outreach and the impacts to nine components, such as illegal fishing and unregulated fishing, and, also, non-point pollution. Hurricanes, development, fish, and increased water temperature.

We have a very sharp group, I would say, that are very versed in many, many different aspects within the fishery, and I can tell you that we covered everything, and I don't think there's any point that was never touched, and that completes my report and summary.

MIGUEL ROLON: Any questions for Eddie?

MARCOS HANKE: Thank you, Eddie. I have a very big delay on my computer here today, and I'm sorry for the inconvenience. Are there any questions for Eddie?

MIGUEL ROLON: I guess we are clear, Mr. Chairman.

MARCOS HANKE: Thank you, Miguel. Thank you for your support. The next one then is the Overview of the Aquaculture Opportunity Areas Initiative with Jess Beck-Stimpert.

OVERVIEW OF THE AQUACULTURE OPPORTUNITY AREAS INITIATIVE

KEN RILEY: Hi. This is Ken Riley, and I will be presenting with Jess.

MIGUEL ROLON: Ken, are you going to share your screen, or Jessica?

KEN RILEY: We were kind of thinking that you guys were going to

show our slides that we had shared last week with you all.

LIAJAY RIVERA: I just pulled it up. Can you see it on my screen?

KEN RILEY: Yes. That looks beautiful. Jess is going to present the first few slides, and then I will speak to the later part of the presentation.

JESS BECK-STIMPERT: Good morning, everyone. I am Jess Beck-Stimpert. Thanks for having us here today. I'm the Senior Aquaculture Coordinator for NOAA Fisheries Southeast Region, based out of St. Pete, Florida. You just had an introduction to Dr. Ken Riley, who is with NOAA's Ocean Service, and Ken and I are going to tag-team this presentation.

I'm going to start off and just hand it off to Ken, and I just wanted to thank you all for taking the time to discuss aquaculture on today's agenda. As many of you know, Executive Order 13921 is the Promoting American Seafood Competitiveness and Economic Growth E.O., and it published in May of last year, and that focused on various actions related to marine aquaculture in the United States.

The Executive Order has three main bins of activity. One is looking at regulatory reform, to remove unnecessary barriers to U.S. commercial fisheries. The second is looking at trade aspects of seafood, to ensure that U.S. seafood has a level playing field in the global marketplace, and the third looks at a suite of activities focused on the expansion of sustainable aquaculture production, and that is the part that Ken and I will be talking about today. Ken and I are specifically going to present information on the process of developing aquaculture opportunity areas, which we will refer to as AOAs throughout this presentation.

As I mentioned, there are several aspects that speak to aquaculture in the Executive Order. Many of the actions allow federal agencies to build on efforts that are already ongoing and able to foster sustainable marine aquaculture and freshwater aquaculture, and the implementation responsibility for these actions is not only with NOAA, but across other federal agencies involved with aquaculture, including the U.S. Army Corps of Engineers, USDA/APHIS, and the Environmental Protection Agency.

I am going to focus on Section 7 of the Executive Order, which speaks specifically to aquaculture opportunity areas. In this section, the Secretary of Commerce has directed NOAA, in consultation with other federal officials, the appropriate regional fishery management councils, in coordination with appropriate state and tribal governments, to do several things,

and NOAA would be leading this effort.

Within one year of the date of the Executive Order, NOAA is to work with these entities to identify at least two geographic areas containing locations suitable for marine aquaculture, commercial marine aquaculture. Within two years of identifying each of those geographic areas, it has tasked NOAA and its partners to complete a programmatic EIS document that would fulfill our NEPA duties for each of those areas, to assess the impact of siting aquaculture facilities there.

After the first year, and each of the following four years, we would identify two more geographic years each year after and complete a PEIS within two years, and so, essentially, the first year would be identification of those locations, which Ken will be talking about, and we're also in that initial identification stage, and so that first year, for our Round 1 of AOAs, and then, after that first year, or sometime around that timeframe, we will be beginning the NEPA process, or the PEIS process, and, while we are beginning that PEIS process for the first round, we'll also be looking at identifying the next Round 2 of AOAs, and so looking at two new areas, and so the process will begin to overlap itself over the next seven to eight years.

Last year, southern California and the Gulf of Mexico federal waters -- I should specify federal waters of southern California and the Gulf of Mexico were selected as the first regions to host AOAs, because there was a lot of already available spatial analysis data and a lot of current industry interest in developing sustainable aquaculture operations.

Many of you know the efforts that were put forth by the Gulf Council to develop a comprehensive permitting program in the Gulf of Mexico, and that regulatory program is no longer in effect. However, there was a really good framework of coordination and cooperation across federal and state agencies that was established, a lot of knowledge that was gained. Also, out in California, there have been several projects that have also been very interested in establishing marine aquaculture, and so these are two areas that were really ripe for AOA discussion.

I will also mention that the E.O. is silent whether AOAs would or could be in federal or state waters, and the idea of having AOAs in state waters could be a possibility in future years, or future rounds, of AOAs, as long as the state is open to development of AOAs in their state waters, and we've actually had at least one state in our region, the State of Florida, who has expressed interest in AOAs in the future.

Some key takeaways from the process thus far is we just want to make the AOA concept as clear as possible, and Ken will be going into the data and the siting analysis piece of it, and, of course, we'll have time to answer any questions, but, just so folks are aware, the AOAs are discreet locations in the ocean that have been vetted through a process of data gathering and stakeholder input.

We have gone to many of the councils thus far to talk about AOAs, and this is the first time we're able to come to you all and discuss AOAs, and we'll be happy to provide updates to you all, through a presentation or a verbal update in the future as well, and we also have gone through a process of public comment, which we did this fall, to ask about specific areas in the Gulf of Mexico and in the southern California region in federal waters that may be suitable for AOAs.

We also asked about input for future AOAs, to help guide us in this next round of looking at areas that may be suitable for aquaculture and begin that process all over again. I also just want to point out that the AOAs are not huge swaths of ocean. They would be, rather, small dots in the ocean, and we anticipate that they would be a size that would support three to five operations for aquaculture, and those could encompass finfish, shellfish, macroalgae, or a combination of species. This is the size of AOA that we are looking at federal waters off the Gulf and southern California during this first round.

It's also very important to note that identifying AOAs is really a process of deconflicting space and getting feedback from the various stakeholders, councils, commissions, et cetera, to ensure that we're choosing the most suitable areas, and also looking at it from the science end as well.

This would not prohibit other legal activities from occurring within AOAs, as long as they are consistent with aquaculture as well, and I also want to mention that any AOA is developed, any operation that would be interested in establishing an aquaculture operation within that particular AOA, would have to go through all of the relevant federal and/or state permitting processes, in order to establish itself, and so, really, none of that would change.

This is not a regulatory process. This is simply a planning process to look at areas that may be suitable for aquaculture in the future, but everyone would still have to go through the same process to follow the regulations and get their permits set up, in order to operate.

I think that takes us to -- Now we're going to Slide 5 now, how we identify AOAs, and I'm going to go ahead and hand this over to Dr. Ken Riley with NOAA's Ocean Service, and he can go through the rest of the presentation with you.

KEN RILEY: We're going to proceed to the next slide, which is a nice infographic, and it really describes the story and the vision around what is an aquaculture opportunity area, and the vision for an aquaculture opportunity area, or potential aquaculture opportunity area, is one that really seeks to identify high opportunity, high potential, for aquaculture development, and, as Jess said, it really could support aquaculture in a variety of format, and so macroalgae and kelp and shellfish and finfish.

We're not modeling for a specific type of aquaculture, but we're modeling using information that the industry has provided on the type of areas that would be suitable for potential aquaculture development.

The concept is that an aquaculture opportunity area could support three to five farming operations, and, based on some national intelligence from industry and the permitting actions underway right now, we know that areas between 500 and 2,000 acres, those small, postage-stamp-sized areas, in the coastal ocean would be suitable to be able to support a minimum of three to five farming operations, and it really is our interest to identify and site these potential aquaculture opportunity areas in places where they would also complement and support working waterfronts and other sectors of the blue economy, communities at-sea, and complement wild fisheries and aquaculture that is already existing.

This slide captures the schedule and the timeline for development, as was presented in the public notice. I wanted to just walk through the AOA steps, and this would be relative to the work that's underway currently and the work that would occur in the out years, the next four to five years.

At the beginning of the year, there's a lot of public and stakeholder engagement, and a lot of outreach, to introduce the AOA concept. We then publish an RFI to collect information that we should use in the siting analysis, in the spatial planning, in the environmental review.

We then did, and have a continuing commitment to, provide updates to the councils, to commissions, to communities, coastal communities, with updates, and to continue to solicit feedback to help inform identification of aquaculture opportunity areas.

Then, at the end of this one-year process, our organization, the National Ocean Service, the National Center for Coastal Ocean Science, will publish an aquaculture opportunity atlas. We'll be publishing, this year, an aquaculture opportunity atlas for southern California and a separate aquaculture opportunity area atlas for the Gulf of Mexico.

I am pleased to introduce you to our spatial planning team, our team of scientists from the National Ocean Service, the National Center for Coastal Ocean Science, that are going to be leading the spatial analysis and planning for the aquaculture opportunity areas, to identify and produce the aquaculture opportunity atlases that we developed.

Our program is led by Dr. James Morris, and we have an interdisciplinary team of scientists, about fifteen, that range from spatial ecologists and geospatial scientists and oceanographers and engineers, and they all are providing critical input into our research process and into the science that's informing this process.

In the National Ocean Service, we are part of the Coastal Aquaculture Siting and Sustainability Program, and our program focuses on four different areas, and, specifically, planning, spatial planning for regional scales, national scales, marine spatial planning in its traditional sense, to help inform coastal management of our ocean areas.

We do a lot of siting analysis and precision siting to help the aquaculture industry find just the right space, where they will be compatible with other industry users and with other national interests, as well as they would capture those opportunities to have the most success at their farming operation and maintain stewardship of the environment.

We have an environmental science team that largely manages a portfolio of environmental modeling to understand how aquaculture interacts with the environment, and then, with all of our products and tools in our science, we're continuously looking to produce tools that the coastal management community and coastal managers can have at their fingertips to help them and aid them in making critical decisions about coastal management and aquaculture development.

The types of support that our program serves to provide and the science that we do focuses on that marine spatial planning, environmental modeling, environmental science advice, and engineering review. We serve at the request and provide science

to support the federal agencies that are involved in managing aquaculture and reviewing aquaculture projects, and this includes largely the U.S. Army Corps of Engineers, the Environmental Protection Agency, the Department of Defense and its assets, as well as our own agency within NOAA, and then all of our coastal managers in our state agencies and partnerships across the nation.

Then a large product of our research goes into tools and technology development, so that individuals can make their own coastal management decisions. I encourage you, out of these tools and technology, to look a look at Ocean Reports. It's an automated spatial planning tool, and it's a conversation starter that coastal managers, coastal stakeholders, coastal communities can use to explore the coastal ocean, to consider projects that might be developing in their coastal ocean, but ocean reports is one of our career tools, but we have a lot of other tools that are out there, and I encourage you to look at some of these tools that are presented on this slide.

For today, I'm just going to use the Gulf of Mexico to kind of review the AOA siting analysis, but we have a similar process, and it's almost identical that's occurring in southern California as well, and so we had numerous stakeholder meetings and meetings with industry and engagement to identify where should we be looking in the coastal ocean of the Gulf of Mexico, and so the study area was identified to include federal waters of the U.S. Gulf of Mexico, depths between fifty and 150 meters depth, that would support a variety of aquaculture in those many different formats, but also ensure survivability from storms.

We met with a lot of engineering groups and said that, for the size operations and the scale of operations, that that fifty-meter depth was really important for engineering for storm survivability.

Then, because the Gulf of Mexico and the study areas were so large, we needed to break it up, so the data could be synthesized and our models could be run with reasonable computational power, and so we broke up the Gulf of Mexico into natural ecoregions, or study areas, that would help us analyze the data within areas of similar ecology and oceanography and those things.

This slide presents our siting analysis workflow, and it goes through the steps that are critical to the spatial planning and siting of potential aquaculture opportunity areas, from identification of the study area and how we go about doing the spatial analysis to overlaying grid cells and doing the spatial statistics to collecting the data and understanding which data

might be used for spatial modeling and which data might be used for environmental characterization, characterization of that ocean neighborhood.

It presents there our suitability model and then some of our statistical analysis that we'll use to go in and identify the precise sites of an aquaculture opportunity area. I am going to go through some of these critical steps in the next few slides.

This is an example of a study area. Now, this one is off of California, and it wasn't really developed for the aquaculture opportunity areas, but it's an example of how we identify the study area, and then the first step is to understand what is that bathymetric profile, because, in both the areas where we're working, the aquaculture industry said the most important thing that you understand is that we hit the right bathymetry for our aquaculture opportunity areas.

Then we'll overlay a grid cell, so that those grid cells will each receive a relative suitability score, and we can compare areas within one area of the study area to other areas, and each one of those grid cells will receive an individualized relative suitability score, so we can make statistical comparisons.

Then we use an exhaustive process and meet with many, many stakeholders and industry representatives and coastal managers and academic institutions and NGOs to collect data and to identify data for the site suitability model. Our data is binned in these different categories, from military and national security, navigation, industrial, and so oil and gas development and cables and pipelines, understanding fishing activities, understanding all the different sectors of kind of the blue economy, and especially shipping and port activities. Oceanographic data, biological data, and then boundary data, the political boundaries that exist within our study areas. On the right is just an example of essential fish habitat that is mapped across the Gulf of Mexico in relation to our study areas.

We then go about building a suitability model. On the left, you'll see a list of different data types and how we have to transform those data types and characterizations into scores, and those scores for the suitability model all transform and will range from zero, meaning that they're not suitable, or not compatible, with aquaculture development, to one, meaning that it would be suitable, or compatible, with aquaculture development.

Usually a score in the middle, a 0.5, means that perhaps that area is going to take some extensive review, and perhaps it takes a

detailed consultation, and so here are some examples of data on the left, and on the right is a suitability model example, and what you'll see is that the suitability model really looks at and provides relative suitability scores and weights of some locations, versus other locations, and so, for this example off of southern California, we can see that the submarine cables there, that are in kind of the burnt orange or red coloration, and the oil and gas, those precise locations are not really suitable for aquaculture development, and so they are scored at a zero.

Then areas where we have increased fishing, or where we have increased ship and vessel traffic, you can see those areas -- That they don't come out, and they don't produce relatively high suitability scores, so that we try not to have a conflict with those industries.

Once we have our suitability scores for each of those grid cells across the study area, we then have to use spatial statistics to identify the potential sites, and so we use a process called cluster analysis that looks for a grouping of those grid cells that would add up to 500 to 2,000 acres, and so, in this example on the left, you can see the cluster analysis, and it's picking the best of the best. This is essentially the absolute best of the scores in that particular study area, and then we have to go through a process to identify and locate those potential sites within those cluster analysis, and, on my next slide, I'm going to share with you how we do that, and it's a process called precision siting analysis.

This is a precision siting analysis. On the map to the right, you'll see a black box in the center of that map, and that black box represents where a cluster analysis would have a grouping of the highest suitability scores. We then want to be able to locate the exact location of a potential aquaculture opportunity area that really maximizes the suitability in that cluster analysis, and so we have a model, and we built a model, and you can see, to the west of that location, there is some conflict. We don't know what it is, but there's some lower suitability scores. You can see we have optimally sited that 2,000-acre white box inside that cluster analysis, to help deconflict, de-risk, that area.

To go into even more detail into this, because this is a council meeting, and councils are largely responsible for understanding fishing and fishing interactions, we'll go to the next slide, and I'll show you exactly how we are using this precision siting analysis to minimize interaction with where the shrimp industry might be shrimping in the Gulf of Mexico.

This is a demonstration of how we use this precision siting analysis, and you can see, to the west of that cluster analysis, that it was actually those relative suitability scores were driven down, because of the shrimp trawling that's occurring to the west of that cluster analysis, and you can see, over a fifteen-year timespan, how we have tried to minimize the actual location and precision siting of a potential aquaculture opportunity area in that location, to really minimize that interaction of where the shrimp industry is fishing.

Here, we have one of the last steps that we do after we identify the potential aquaculture opportunity areas, and we then want to go back and look at all the different data that were included in the model, as well as other data that can be used to characterize that ocean space.

We'll calculate the area of the space, the relative suitability scores, the bathymetry, the slope, the oceanography, the wave climate, the currents, the temperatures, the chlorophyll levels, and we'll calculate the vessel traffic interactions, and then we'll go through regulatory offices and identify which regulatory management offices have jurisdiction over that ocean space.

Then the last step is to develop the final report and that atlas, and so that atlas will contain a full description of our process, of our science, and then the maps of the potential aquaculture opportunity areas that will then be considered in the programmatic environmental impact statement and the NEPA review that will be conducted over the next two years. With that, I will just say that I appreciate the opportunity to present, and Jess and I are here to answer any questions. Thank you.

MARCOS HANKE: Any questions for the presenters?

MIGUEL ROLON: Marcos, you have Tony and Nelson Crespo.

MARCOS HANKE: Tony, go ahead.

TONY BLANCHARD: Good morning. I was thinking that the MCD, like the Hind Bank, because of where it is located, the depth of water, and it's a place that the tide goes through, and so, if you are raising fish, the waste off of the fish will not be congregating or falling in one small area, and it would be dispersed, and it would also serve two purposes, because I'm pretty sure, if you put in an aquaculture -- An AOA there, an aquaculture setup there, whether it be fish or algae or whatever, but it would have to be monitored, and so that would serve the purpose of enforcing what is supposed to be a closed area, an MCD for right now, and so it

would serve two purposes, because it would be monitored 24/7. Now, I was wondering if an MCD would meet the standards that we are looking for or if there is exceptions for those.

MARCOS HANKE: That's a question, Tony, to the presenters?

TONY BLANCHARD: Yes.

JESS BECK-STIMPERT: So what is an MCD? I'm sorry, but we don't recognize the acronym.

MIGUEL ROLON: It's a marine conservation district. It's a marine reserve south of St. Thomas that has been established to protect the spawning aggregation of red hind and other species of snappers and groupers. Presently, there is no fishing allowed in the area.

KEN RILEY: Jess, I will just add that we worked very closely, in the Gulf of Mexico and California, and we had many, many stakeholder engagements with the National Marine Sanctuaries and similar areas that are marine protected areas for inclusion, and making sure that we get the scoring and the consideration of that just right. Then, additionally, our program maintains a modeling portfolio that looks at effluent and particle tracking and tracing, and it looks at the fading materials that comes from fish farms around the country, and we would bring that expertise. That would be included in some of the programmatic environmental review.

MARCOS HANKE: Thank you for your answer. Nelson.

NELSON CRESPO: Thank you, Mr. Chair. I am curious, and what would be the damage caused to the habitat and marine ecosystem with the waste produced with the aquaculture sediments?

KEN RILEY: Well, our science seeks to find the right location, where there is minimal detectable environmental impact from some of these farming operations, and we have extensive experience, over the last ten or fifteen years, in modeling and monitoring and understanding how net pen operations and finfish operations work, and we are increasingly working to understand shellfish and seaweed operations as well, because of the tremendous interest in growing algae for food and other uses is really, really important, but the specific impact would be carbon on the bottom, the release and emission of nutrients into the water column.

We find that, like this farm that's pictured on the screen there, and that's off of Kona, Hawaii, and there is really minimal detectable or discernable change in the environment in relation to that farming location.

MARCOS HANKE: Thank you. That's offshore in deep water or shallow water?

KEN RILEY: It's 200 feet of water, and they grow almaco jack, an amberjack species.

MARCOS HANKE: That's just to put in context your answer. Thank you. Any other questions? Hearing none -- Carlos, go ahead.

CARLOS FARCHETTE: I was just wondering. Since determining an AOA -- Take, for example, the U.S. Caribbean. Since we, years ago, separated our EEZ for each jurisdiction, would an AOA be selected for the whole U.S. Caribbean, or could it be for each individual EEZ for like St. Thomas, St. Croix, and Puerto Rico has its own EEZ demarcation, geographical demarcation?

JESS BECK-STIMPERT: I think Ken and I can probably answer this together. In terms of state or territorial waters, when we put out a request for information every year, we're really looking for information on where we should look at developing AOAs for --

MARCOS HANKE: The audio is off.

MIGUEL ROLON: We lost you, Jessica.

KEN RILEY: I will pick up. In determining the AOAs, we review where industry is interested in going, in all those different formats, and then we also meet with the councils and meet with different teams to formulate the study areas, and we try to optimize and pick the right study areas, so that it also captures efficiency in work.

We're not really interested in going places that wouldn't be supported by aquaculture. It just wastes a lot of labor and efficiency and things like that, and so there is a survey that occurs, as well as that public input process, to help inform where the aquaculture opportunity areas would go. It's not limited to state or territorial waters or federal waters. It can span those, but just the present process is in federal waters.

CARLOS FARCHETTE: I understand that, but my question really is, for federal waters, our federal waters have been separated for all three islands, and so, if an industry decides that, well, I want to do a farm, open-ocean farming, in the U.S. Caribbean, it may affect a particular island more than it would another one, and so I'm not sure how that would work out.

MIGUEL ROLON: Carlos, if I may, the process just started with this Executive Order, and, really, what we are focusing now, we the government is focusing on, is the federal area surrounding the different jurisdictions around the United States, and so, in this case, this whole presentation is addressing the area surrounding Puerto Rico and the Virgin Islands that we consider the EEZ.

Later on, maybe, in the process, the government and federal government will join in efforts to look at aquaculture opportunity areas, but, at this time, the Executive Order as-is, we are looking for U.S. Caribbean EEZ waters that could be construed as areas of opportunity for aquaculture, and so that will come in the future, and the experience that we have in Puerto Rico and the U.S. Virgin Islands is we have several aquaculture marine water projects that have been within the area of jurisdiction of Puerto Rico and the Virgin Islands.

That is where we are now, and I believe that this record will be incorporated in the decision-making process, and I believe that we have Jessica back, if she wants to add something.

KEN RILEY: I would just add that our program is a science-based program, a research-based program, and we would be pleased to work in the Pan-Caribbean area, the broader Caribbean area, to share our methodologies, our process, if it would help inform those conversations. We have worked in the Caribbean before, and we've developed best management practices for aquaculture in the Caribbean, and we would be pleased to share that with the broader Caribbean conversation, but, for today, we are just talking about the Executive Order. Thank you for answering that, Miguel.

MARCOS HANKE: Thank you very much. I'm a little concerned with the time here. We have space for one more question, and then we will move on, and, also, to invite the presenters for a future presentation with a little more time, because, for sure, there is a lot of interest among the participants. Anybody else in the queue?

MIGUEL ROLON: We don't have anybody asking.

MARCOS HANKE: Thank you, Miguel. Thank you for a great presentation. The next presentation on the agenda is the Outreach and Education Advisory Panel Report.

MIGUEL ROLON: Wait. You have the aquaculture project by David Miranda. That's the next presentation, and he will be asking Christina and Liajay to present from his computer.

MARCOS HANKE: That is my mistake. Sorry to the next presenter, David Miranda. We are waiting for your presentation. Go ahead, David.

AQUACULTURE PROJECT - PARCELAS SUAREZ LOIZA

DAVID MIRANDA: Thank you so much. No worries. I am very honored to be here presenting to you MarePesca, which is a for-profit company that we started here in Puerto Rico, with the goal of really driving a tech revolution in agriculture and tackling some of the biggest problems that we have here in the Caribbean that I will be talking about in the next few slides.

The founders include myself and Carlos Nieves, who is also in the meeting, and I will be doing the presentation, but he's there and can answer questions, as needed. We are Puerto Rican, born and raised, and we spent some time travelling around the world, and we have decided to come back and really apply a lot of the concepts that we have learned across the many years that we have been exposed outside of the Caribbean to really drive, as I said, a tech revolution here in the region.

I did my undergraduate in materials science and engineering from MIT, and then I have a PhD also in a program between MIT and Harvard in biomedical engineering. Carlos is an investor, trader, and analyst with a lot of years of experience developing electronic products across the world, and he trained as an electrical engineer from the University of Puerto Rico.

Really, we came together to impact some of the biggest problems. When we think about food security and economic development and innovation and sustainability and protecting seafood stocks, those were issues that really drove our attention, and especially in the Caribbean, where we are starting to see the impact of climate change.

Here in Puerto Rico, we had a hurricane three years ago that really changed the way we started relating to the natural ecosystem, and so that really drove us to start thinking about how could we apply all of our engineering concepts to solve problems in the region, and one of the problems that really caught our attention was the idea, which is crazy, that we import in the region, especially here in Puerto Rico, that we import more than 90 percent of the seafood that is consumed.

This comes from remote places, and, obviously, this room knows this problem better than anyone, but that's just bizarre. You have people that come from all over the place to our region to eat

seafood, and, in reality, they're eating seafood that has been brought from really remote places, and can we do something about it was something that drove us to this problem. Quickly, we realized that there's an unmet need for technology that enables local production, whether that be through aquaculture or other sources.

We decided to form MarePesca, and, really, our goal is twofold. It's to develop cutting-edge technology, in combination with local seafood production hubs in the Caribbean, that would allow us to increase productivity in the region and ultimately lead to food security.

Our first technology -- We're working on a few, but one of the first that we are happy to share with you is that our team has developed a methodology for the commercial production of red snapper, and so we are now working, in collaboration with the town of Loiza, a town that has a long history of vulnerable and economic disadvantage and coastal relationships as well, and so we decided to reach out to them, but we thought we could have the biggest impact in that ecosystem, and we would be working with them to launch a recirculating marine-based or coastal land-based production there, which is, for those that are not too familiar with the geography of Puerto Rico, that town is about a thirty-minute drive from some of the biggest areas in San Juan, and so that also brought our attention to it, and so we're working right now to launch, as I said, a land-based production of this red snapper product.

When we think about where we are and where we want to be in the next year and in the future, currently, we are in the process of finalizing our fundraising to launch that first pilot to start installing equipment and begin production by September, so that we can have our first harvest around spring of 2022.

Then, from there on, start thinking about expanding our production in Puerto Rico across the Caribbean to other -- To continue developing other technologies, and even consider offshore operations, as things start making sense.

One of the things that also drives us to this space is the opportunity for educational and touristic offerings. When you go all over the world, you often -- When you're sightseeing, you get to visit a local production of anything, whether it be in Japan that you go see the assembly lines of Toyota or Honda, and can we develop something like that here in the Caribbean for aquaculture? It's something that is interesting to us and that we want to explore a bit more.

Also, can we use this as an opportunity to partner with educational institutions, or research institutions, in the area to also continue to develop, as we said, that technology revolution in the area and serve as a case study for multiple projects to come.

That's a little bit about us. When we think about what things that we could always take advantage of a resource like this group, we're looking for potential collaborators and research institutions or individuals who are interested in developing technology in the aquaculture space, and can we work together, and feel free to contact us, and our information is at the bottom.

We're looking for marine biologists with experience in recirculating systems to join our team and serve as production managers for that initial production and next to come, and, obviously, and this is true for every startup, but we're always looking for funds, whether it be grants or other funds, preferably, that would allow us to carry out our mission and continue to provide food security and economic development in the region. As I said, here are our contacts, if you want to learn more or if there is something that comes to mind and we don't get a chance to discuss it in the Q&A.

That's MarePesca, and hopefully we will be sourcing the seafood of the future from Puerto Rico and then expanding elsewhere in the Caribbean, starting with red snapper and other technologies yet to come. Thank you.

MIGUEL ROLON: You have a question from Raimundo.

MARCOS HANKE: Go ahead, Raimundo.

RAIMUNDO ESPINOZA: Thank you for the time to ask the question, and thanks, David, for the presentation. It was really great, and we really appreciate a lot of the work that you're doing, and it's something that's very needed.

I have -- One is an offer, and we can help you connect with a lot of fisheries experts and aquaculture folks that have done things that are similar, so that we can help you connect with them, so you can kind of see where the bottlenecks in production can be, since efforts like this have been done similarly in the Gulf and a couple of other areas, and so I think we can connect you with them, to see where you can kind of find saves on the cost and the operation. Getting started is going to be -- That's kind of one of the more difficult processes.

The other thing that we would also like to help you guys out with is, if red snapper -- If it's local, the production of more redfish for Puerto Rico is going to -- One of the things that we're going to try to help with is to promote aquaculture, but avoiding some of the things that have happened in the past in the U.S., like creating the tension between aquaculture and wild-caught.

Your project sounds really exciting, but a lot of folks are going to see it as the right competition with the deepwater snapper fishery in Puerto Rico, which is something that is one of the most economically-viable fisheries in Puerto Rico, and so it's one of those things that helping you connect to the local fisheries industry as well is really going to be very important, so that you can get support and see how you can work with the industry as well, with the wild-caught, so that there isn't any of this tension that has been created in the past with other species that have happened in the U.S. and elsewhere, but I think it's really great, and so I'm very happy to hear that this is happening, and it's something that's very needed, and it's been a long wait, but you're going to have a couple of obstacles, depending on the species you choose.

If it's capitanos, because of the production of a predatory fish, and so the feed that you're going to use, and so there's a lot of discussion here that we can see how we can touch base and connect you with a lot of the folks that have been doing this in the past as well as local organizations that can help you with water quality and see how this can happen, but I think this is a very good project, and we really appreciate you taking the time to present it to the fisheries sector and to the council and allowing us to ask questions and participate, and so thank you so much.

DAVID MIRANDA: Thank you. To your point, I wanted to clarify something. When we think about this opportunity, we really want to tackle the 90 percent that is being imported and not displace at all the 10 percent that's being provided by the local ecosystem, and so, when we look at our business opportunity, or market opportunity, we really have been focusing on that sector, whether it be restaurants or retail or local direct consumer, that is mostly, or exclusively, being supplied by the imports.

We have really been careful in doing that, and we've been working, through the Sea Grant program, with the local fisheries and Jose Rivera, who is also in the meeting, has been a great advisor to our team, and so, Jose, thanks. I will use this opportunity to thank you. Yes, we're looking forward to continuing to collaborate with the ecosystem and to continue to solve this big problem that we have of food insecurity.

MARCOS HANKE: Thank you. I have a question. Just to confirm. When you're talking about red snapper, it's genus campechanus that we are talking about?

DAVID MIRANDA: To answer that question, we are working with a few of the lutjanus family, species within the lutjanus family, and campechanus has been one that we've looked at, but we've also started looking at the analis and purpureus as well, and so I would say, for now, we're keeping it generic red snapper, but we are conscious about limitations, as it relates to regional species and environmental concerns of that sort.

MARCOS HANKE: I will complement my question later on, and I want to give space for two more questions. Any other participants?

MIGUEL ROLON: Marcos, we don't have anybody else in the chat so far. One thing we would like to hear from the council members is that, although the council does not disapprove or approve of aquaculture projects, an expression of let's say positiveness, that we accept this initiative, and we also -- Like sharing information, for example, and that will be good for the record that they are developing.

This is one of the projects that can start in Puerto Rico, but it also can be exported throughout the Caribbean areas, if it goes well, and we are trusting that the two partners, Sea Grant and other institutions, that are helping here, and the National Marine Fisheries Service is helping, through Jose Rivera, and Jose Rivera is a member of the National Marine Fisheries Service Regional Office, and he's in charge of aquaculture plans, among other things, and habitats, and so they are on the right path and also doing the right thing for making this project a success story.

The other point is that, to be very clear, they are by no means thinking of interfering with the fisheries, which is good, and, just for the record, we also import 90 percent of what we eat, and most of that import comes from aquaculture, especially if you look at the shrimp industry, and so this is a step in the right direction for this area. Thank you, Mr. Chairman.

MARCOS HANKE: Thank you, Miguel. Just to wrap up, I want to just say my endorsement to the idea, just personally, and I really think that it's something to explore, based on science, and I just want you to know that I am very interested to learn a little more and maybe to explore the ideas, through your company, or through your group, the multitrophic production of aquaculture operations, and I think they are much more compatible to the Caribbean, and we should promote projects that have added value and added

restoration, improvement of water quality, restocking, and also supporting food security for the local communities.

About the species, from the first view of this, I really think that we should explore the use of the local species and the common species that are here and not to bring species that are uncommon for us, like campechanus and like what happened with the cobia in the past, and that's my comment, and I would like to hear from the other council members, and then we're going to wrap up.

MIGUEL ROLON: Marcos, you have Damaris asking for a turn to speak.

MARCOS HANKE: Damaris.

DAMARIS DELGADO: Good morning. I agree with your comments, Marcos. This is an opportunity not only for food security, but in terms of the sustainability of the resources, and, as you said, for habitat restoration, and that has been our intention, or our interest, in the Bureau of Fish and Wildlife within DNER, and also within the secretariat of DNER, to promote aquaculture for the benefit of the resources as well, and so I see both objectives as very important and that we have great opportunities to work towards both goals.

In our research lab, we are starting some projects geared towards the objective of the sustainability of the resources, including protecting the wildlife resources. Thank you for letting me express.

MARCOS HANKE: Thank you, Damaris.

MIGUEL ROLON: You have Carlos Farchette.

MARCOS HANKE: Carlos, it's your turn now.

CARLOS FARCHETTE: Thank you, Mr. Chair. I'm just wondering, and this sounded like it was a land-based operation, and so I'm kind of wondering how much input the council can have on a territorial issue, or is it just that we're giving support?

MIGUEL ROLON: That's what I said. The council -- Not even in local waters, but in federal waters, and that's a long story, but, anyway, the council is always looking for ways of avoiding pressure on natural resources surrounding Puerto Rico and the Virgin Islands, and so that's what I said at the beginning. Although the council doesn't have any jurisdiction in the area, an expression of endorsement or acceptance of this kind of project for this area is something that will be used by the project managers to support

proposals, et cetera.

The project is all land-based, so far, at the moment, but they also are planning to expand the project, and they are doing the right thing, because they are starting from the beginning, from scratch, looking at all the possibilities of establishing this project, and I believe that the project will be successful, and I wish that they are successful.

I have been working with aquaculture for many years, more than forty years, and I have all these crazy projects. I have two boxes filled of crazy projects on aquaculture, but this one is not a crazy project. This is a valid way of doing it, and so, anyway, we wanted the council to hear their presentation, so that you know this is happening here, and this -- Maybe in ten years it will be exported to other areas, and we don't know, but that's what we want at this time from the council.

MARCOS HANKE: I already stated my opinion and contribution. One more council member, just to wrap up, and we really need to wrap up this. Go ahead, Vanessa.

VANESSA RAMIREZ: This kind of project is very interesting, and especially what I want for my comment is that we should share this kind of information with our commercial fishermen, so they understand this better and don't think that this kind of business is going to be taking their fish, or taking their business, with the restaurant and all that, and so it's a great opportunity, especially because we already know that we don't have enough fishermen to give to the restaurants around the area.

I think that, in these kind of projects, we should start to give more orientation and education to our commercial fishermen for the new technologies that are approved and that they should share and don't treat this kind of project like something that is going to be taking their business, and so they can share their knowledge, and, also, they can contribute their experience with these kind of species. Thanks.

MARCOS HANKE: Thank you, Vanessa. Thank you very much for a great presentation, and you have the support of the council, and it's an ongoing process that we all keep learning about it, and, anything you need to announce, or to communicate to the community, you can contact us to keep doing that with the fishing community. Thank you very much.

DAVID MIRANDA: Thank you. I appreciate everyone's comments, and hopefully we'll be in touch soon.

MARCOS HANKE: Thank you. The next item on the agenda is Outreach and Education Advisory Panel Report.

OUTREACH AND EDUCATION ADVISORY PANEL REPORT

ALIDA ORTIZ: Good morning, everyone. I am going to make a very short report since our last O&E AP meeting in March and what we have been doing up to this moment and what we propose or plan to do in the next month.

There have been a lot of meetings attended, because, as Outreach and Education Advisory Panel Chair, I'm a member of the NOAA Caribbean Steering Committee, and the MREP program also, and we have been working, especially through MREP, on the review and development for the curriculum for the workshop of the next program, or the next version, that is going to be presented in Puerto Rico.

Also, I have presented with Wilson Santiago, in the PEPCO workshops, the information about the ecosystem-based management to the fishers, and those are the meetings that we have been doing since January until March.

One of the activities that I am very interested in presenting to you is our approach to the schools and teachers for the marine fisheries ecosystem of Puerto Rico and the U.S. Virgin Islands. We already had a presentation to a group of ninth graders in a school in science, and it was very, very successful, and there was very much interest by the students in what is all this about fisheries and how we can get information.

My idea is that the marine fisheries ecosystem knowledge is not just for the science courses, but it has to be all across the curriculum and all across the grades, and, actually, this afternoon, I have another presentation for what we call Eco-Schools, and it's a special program that has been in Puerto Rico for probably around ten years, and these are schools where environmental education is connecting content to the curriculum through all the grades, and so I want to see that learning about the marine fisheries ecosystem becomes also part of the environmental education that we have to promote among all of our students.

Usually, we have taken more time in working with the forests and working with the land-based ecosystem, but we know very little about the marine ecosystem, and one to get this in is to get it into the curriculum, and so this is something that I will continue,

and it is something that I would like to request support from the council.

When we make these presentations, we have to present, especially in this moment, where we cannot go outside, we have to present a lot of images and videos and slides that will emphasize the content of learning the marine ecosystem is not just for marine ecology or for biology. When we do social studies, we have to do all the geography, and then, there, we can go to the shore and learn about the ways and the tides, and then, when we go to the people that live on the coast, we have to learn about the sociology and about the history and how these people live.

We also would like to promote and to have more students interested in studying fisheries disciplines and not just fisheries biology, but we need a lot of prepared people on the sociology and the social issues that deal into these fisheries communities.

We would like to request the council to support the development of activities, and it can be a learning guide, or we can take the information from the marine fisheries ecosystem in Puerto Rico and the Virgin Islands and put it into a teaching, a learning, guide, especially based on what -- I think it's more effective in this area, and that is the project-based learning, because, if the students take one issue, and then they visit a fishing village, and they talk to the fishers, and they may even go fishing with them, and they learn to recognize the species that they eat in that house, and that will be a great addition to this project of learning about the marine ecosystem.

We would like to have more PowerPoints for each of the themes and short videos, and we already have some on essential fish habitats, but we don't have the same thing on the fishing activities, and so that's something that we would like to request support from the council.

The other issue that we have been working in outreach and education projects and that I have informed to the council in previous meetings is our sustainable seafood consumption campaign, especially the recipe book that we're working on.

Here, you see all the chefs that we have from Puerto Rico and the Virgin Islands at this moment, and we have been working with the consolidation, let's say, or the production, to see what the book will look like, because we have the introduction, and we have the chapters describing the species, and we have the recipes, and we have the photos and biographies of the chefs.

At present, we have some limitations, because some of the species that were included from the beginning to work within the recipe book the fishers have been able to catch them, because of weather conditions, and there are many things that have put a little bit of a -- They have made it slower, the production, but we hope that, at the June presentation, we will have a very complete version of the book. UPR Sea Grant is working with us on the design of the entire book, and so we will have an update the next time.

Also, with this sustainable seafood consumption, other products are being developed, and we have already, and you may have seen them in the YouTube or in the Facebook page, and Christina will talk about that in a little while, but short videos on the underutilized species, because we don't want to put more pressure on the fish that everyone eats and everyone asks for in the restaurant or in the market.

There are many, many species in the islands that are caught with the ones that are sold very well, and they are just as good, and they are easy to cook, and we should promote those, so that we can give a little bit of rest to the species that are overconsumed, and Jeanette Ramos and Christina Olan have been working on these videos, and we have one already, and they are working on more with lionfish, so that we can get rid of part of it, at least.

Then we also would like to develop or work with more materials on the underutilized species, and we have the coasters, and we have the placemats, but there are many, many other projects and many other products that will show how to recognize species and probably where can they be cooked, or how they can be cooked, and so that's something that -- We will work with that as part of the products that will be produced. Here, you have the recipe from Cory Magras, and he's a chef from St. Thomas, and the one that you have there is for queen snapper in a coconut pillow.

The other project that we are very intensively working is the outreach materials on marine protected areas in St. Thomas and St. John, USVI, and it has been a very close project developed with people from St. Thomas/St. John, and especially Julian has been working with us a lot, and Ruth Gomez, and Tony Blanchard, and we already have the poster that they went through the first draft, and we have to send them our latest review, so that they can see how it looks.

The poster is the one that you see on the left part of the slide, and, in the middle, you have the fact sheet, and the fact sheets takes the same information that is in the poster, but it has like four phases that will be distributed in the marinas, in the

restaurants, where the tourists go, everywhere, so that they can recognize and they can understand what are these MPAs, especially the Grammanik Bank and the red hind district, Marine Conservation District, and the importance that they know the regulations and why are there regulations and that they respect the regulations that are in place.

We are also producing these two placemats for seafood in St. Thomas and St. John, and this is the idea that we -- The same one that we had in Puerto Rico, and they were very, very successful, because the restaurants that had them -- People asked for them, and they wanted to take them, and so, on the back of the -- In the front, you have the species that are underutilized species, but they are available, and they can be served in this restaurant or in any other places, and, behind, there is the calendar for the regulations seasons of some of the species.

This, we will be probably getting the complete project finished by mid-May, something like that, and we will go back to the group in St. Thomas to see if they are totally in accord with it, and then we will do the production, the printing, for the people.

For 2021 to 2023, we are working on some other initiatives, and, from last year, we had the seafood chemistry conference that had to be postponed, because of the pandemic, and so we hope that it can be either by the end of this year or in 2022, but it's a content that is very, very important, because we hear a lot about ciguatera, and we hear a lot about people getting poisoned with fish, but we don't know much about what is the product, what is the substance, the chemistry, that is working, and this will be a conference for the Caribbean on that, and we had a lot of plans that we had people working on, on its development already, but it has been delayed, due to the regulations that this type of conference, or this type of group meeting, was not approved.

Also, the other thing is that we would like also to develop some kind of a meeting, big meeting, on the status of fisheries education in Puerto Rico and the USVI, and we have to find out where are fishers content included in programs, academic programs, that it's in UPR, and it's UPR not only Mayaguez or Humacao, and there are many other campuses in UPR Puerto Rico that deal with the marine environment, and so we want to know what is the status of that, and also in the USVI, because it's important we get more people prepared in the science and the technicalities of these issues in the marine environment.

For so many years, at least from Puerto Rico, they have said that we live with our back to the sea, because we put more attention on

the terrestrial ecosystem and on the terrestrial resources than we do with the sea, and, for that to change, we have to have people prepared in the scientific and in the legal and in the social aspects of marine sciences.

We also would like to work with fact sheets and short videos on the MPAs in the region and their impact on fisheries sustainability. The presentation that Diana Beltran made yesterday to me was a very good beginning, because that is saying we have to put it in documents, or in products, that everyone can read, or that everyone understands what we are saying about the qualities or the characteristics or the reasons for these marine protected areas.

We will recover also the CFMC newsletter that we have produced for quite a long time on the in-person meetings, but now we will take a short glance at the meetings that we have virtually, and we will make that report again, and it will be part of the website, and we would also like to work, and we have talked to Wilson and with Christina about this, on a PEPCO workshop that deals with the marine fisheries environment and the marine fisheries ecosystem, because I do go to the PEPCO presentations, but it is just like a very, very short, short moment, and it is to explain the ecosystem-based management approach and how it is important, but, before that, we have to learn a lot more about the marine ecosystem, and so it would be a very special PEPCO workshop on marine ecosystem knowledge. Now we have social media, and I think, if Christina is around, Christina is the person that is charge, and she will present this.

CHRISTINA OLAN: Good morning. I will share my presentation. Thank you for this moment to share with you what the CFMC is doing with social media, Facebook, Twitter, YouTube, and Instagram. I am very thankful for all the support that many persons --

MIGUEL ROLON: Christina, we are having too much noise on your audio.

CHRISTINA OLAN: I am using the headphones, but --

MIGUEL ROLON: We have too much noise, white noise.

CHRISTINA OLAN: Could you wait just a moment? Is that better?

MARCOS HANKE: It's a little better. Go ahead.

CHRISTINA OLAN: Okay. I am sharing the numbers, and I am not going into them in-depth, but, if someone has a question, just

feel free to ask me the question at the end of the presentation. I think that I am having problems with my internet connection, and so I will stop sharing my presentation, and Liajay could share it, and maybe you will be able to hear me better.

LIAJAY RIVERA: Okay. No problem. Give me a second.

CHRISTINA OLAN: The content that we mostly share through our social media pages are seasonal closures, meetings and activities, pictures and videos, educational materials, announcement of new publications, content produced by other agencies, and we are also collaborating with other organizations to produce content, and also, we are posting a monthly bulletin.

MIGUEL ROLON: Christina, stop using your mic, and call the phone, and Liajay can --

CHRISTINA OLAN: Okay.

ALIDA ORTIZ: After Christina completes her presentation, we'll go to the liaisons from the area, and we have Wilson from Puerto Rico and Nicole Greaux from St. Thomas/St. John and Nikita Charles from St. Croix, and then I will go back to my presentation.

MIGUEL ROLON: How much more time do you need, Alida?

ALIDA ORTIZ: Not very much, because, for me, I have finished my presentation, and the liaisons go after that.

MIGUEL ROLON: Okay. Once Christina fixes her audio problem, but we are now working with Christina and Liajay, as you know, for these presentations to the council, and so we are grateful to both of them, and they have done an excellent job. The problem is that Mayaguez is in and out of electricity power, and what we have done is that the social networks that have been coordinated by Christina has undertaken a lot of tasks that we have assigned to her.

We have the Facebook page, as you know, and we have What's App, in coordination with Wilson Santiago, and we also have the YouTube channel, and this meeting is being streamed to the YouTube channel as we speak, and so it will be available. All of our videos are available for anybody who wishes to have a copy of them, and just contact Diana Martino or Christina from the council.

The videos that we were talking about are in response to the presidential order last year that you have seen today, where President Trump was requesting that agencies and programs that promote local seafood -- To increase the productivity of the United

States' production of seafood, of course, and that goes to the issue of imports versus locally-produced seafood.

MARCOS HANKE: Christina is on the phone, Miguel.

MIGUEL ROLON: Good, because I ran out of things to say. Christina, can you hear us? If not, we can move ahead with the presentation, and she can do that in August.

ALIDA ORTIZ: Marcos, what do you want me to do?

MARCOS HANKE: Let's go to the next presenter, and we'll see if we can come back to Christina's presentation.

ALIDA ORTIZ: Okay. Liajay, if you can put back my presentation.

LIAJAY RIVERA: Yes. Just a moment, please.

ALIDA ORTIZ: Thank you so much.

CHRISTINA OLAN: I am on my phone, but I don't know what happened.

ALIDA ORTIZ: Christina, why don't we go then with the liaison reports, or are you ready to continue your presentation?

MIGUEL ROLON: Alida, hold on a second, because we are mixing a lot of things. Let's go with the liaison reports, and Christina can do the presentation at the August meeting. It will be part of the record anyway.

ALIDA ORTIZ: Okay. Christina, we are going to stop the presentation, and we'll go to the liaisons. On the liaisons, we have Wilson Santiago from Puerto Rico, Nikita Charles from St. Croix, and Nicole Greaux from St. Thomas/St. John. The function of these liaisons is to keep the local communities in each one of the islands connected with the council and connected with outreach and education, so that we have them giving us ideas and suggestions and requests of what we need to do for the community, and so that's why -- At the last council meeting, it was requested that the liaisons make a report at each one of the meetings, and so this is their reports. Wilson.

CFMC LIAISON OFFICERS REPORTS
PUERTO RICO

WILSON SANTIAGO: Good morning to all of the council members and to everyone connected at this meeting. My name is Wilson Santiago, and I am the Puerto Rico liaison officer. For the Puerto Rico

liaison participation in 2021, this year, we successfully presented the virtual educational program for fishers, and we named it PEPCO, and we have support from Christina Olan, with new publications and the CFMC social media, regarding closures, DNER administrative orders, and fisheries education for Puerto Rico fishers.

We had to create a What's App broadcast messaging, and, right now, I have like 161 fisher contacts, to send them announcements and meeting dates and educational materials regarding fisheries, and we are sending that like twice a week, this message.

We have support for fishers with issues and information of the DNER and CFMC in the state and federal management, and we have given fisheries educational materials for the fishers at the fishing docks, and we prepare an envelope with a lot of educational materials, given by The Nature Conservancy, the Sea Grant program, and the CFMC. In the pandemic, we started using a lot more the social media and created What's App broadcast messaging, and we have accomplished more participation at the CFMC DAP and O&E AP meetings of commercial and recreational fishers.

For the educational program for commercial fishers in Puerto Rico, and we named it PEPCO, we started giving it on February 17 until March 17, every Wednesday, and we have five sessions every Wednesday, and we have given the program virtual, five sessions with different topics and presenters, and a total of eighty-two people registered for the program, and a total of forty-five people completed the five sessions, and, therefore, they received a participation certificate and a lot of educational materials from the CFMC, Sea Grant, and The Nature Conservancy.

In the virtual program, we bring new presenters to give specific topics regarding the fisheries in Puerto Rico, such as the HMS permit, and I want to thank --. She is a contractor of NOAA Fisheries, and the commercial statistics report, I give special thanks to Daniel Matos from the DNER. Invasive species, regarding the lionfish, special thanks to Jeanette Ramos of the Sea Grant Program. Coral disease and whitening, special thanks to Miguel Figuerola, and I saw him connected. Thank you, Miguel.

Another topic we brought to the program is the importance of sharks to the coral ecosystem, and that is special thanks to Juan Valdez and Ori --, and they are from the program of marine at the University of Puerto Rico Mayaguez. The ecosystem-based fishery management plan, thanks to Alida Ortiz. It was a very special program, and it was a good program, and we brought them like an hour or two hours in each session.

CFMC social media and What's App broadcast messaging was very crucial to the outreach for the PEPCO participants, and so I want to thank the CFMC social media and everybody that shared the publication to gather all the participants in the PEPCO program, and, to all the forty-five participants that completed the five sessions, we will send them a certificate and the educational material, and that was to everyone that completed the five sessions of the program.

Right here, I am showing you all the educational material that we are sending to the forty-five participants. If you see over there, all those boxes in my house, and maybe this week I am going to start sending them, but all this material we gathered from the CFMC, the Sea Grant Program, and they gave us a lot of educational materials for the fishers. The Nature Conservancy is helping us to send the boxes to all the participants.

In Puerto Rico fisheries, we have, again, issues with the DNER license and permit procedures, but, right now, thanks to the Secretary of the DNER, and, in January of this year, he made a new administrative order that permits all the fishers that have the new license and the renewal and the permits, so they can -- They extended the deadline until June 30. The misinformation of the new fishers about the fishing closures, statistics report, licenses and permits for state and federal waters in Puerto Rico. The law enforcement to watch the closures and illegal commercial fishing in state and federal waters, and there are those three fishers issues in Puerto Rico.

The next steps for me for the liaison in Puerto Rico is we are keep on supporting fisheries management and social media, and we are going to continue to educate more commercial and recreational fishers regarding fisheries management matters, and we are continuing to cooperate with the recreational fishers educational program. We are participating in the O&E AP, DAP, and other meetings regarding fisheries management, and we're going to continue to deliver the educational materials to commercial and recreational fishers.

If there any questions, but I just want to say thanks to the CFMC, the DNER, the Sea Grant program, The Nature Conservancy, and Raimundo Espinoza too, from Conservacion ConCiencia, and he has helped us a lot in the program and in the present program, and so let's hope this pandemic stops and we start giving them a new presence, via the PEPCO program, and we can make meetings in-person with the fishers, because the difference from in-person and virtual is very different. The dynamic with the fishers is better

in-person. If you have any questions, or any suggestions.

MARCOS HANKE: Thank you very much, Wilson. The next presenter, the next liaison.

ST. CROIX

NICOLE ANGELI: Good morning. This is Nicole Angeli from the USVI. Nikita Charles asked me to reach out to all of you, and she wants to thank everyone for the opportunity to have served as the St. Croix liaison for nearly the past year, working on our Reef Responsible initiative, restaurant trainings, attending multiple meetings of the CFMC, and she's recently accepted a full-time position with the Department of Health for the territory, and so she has less time to commit to being the CFMC liaison.

She is still working with us, on a voluntary basis, to conduct our restaurant trainings, with Reef Responsible, and she also continues to serve as the Golden Hook Fishing Club secretary, and so she communicates with the sportfishing industry all of the information that we provide, and so we thank Nikita for her great work over the past year and some months, and we look forward to onboarding a new person, which we would announce at the next meeting, and so thank you so much.

MARCOS HANKE: Thank you very much. The next presenter.

MIGUEL ROLON: Nicole, are you on?

ALIDA ORTIZ: I don't know whether she is present. That will be St. Thomas/St. John. I don't see her on the list.

MARCOS HANKE: Alida, can you give a short overview of what she has been doing? Does she report to you? For us to move on.

ALIDA ORTIZ: Well, she has not reported very much. The only thing we are doing in St. Thomas/St. John at this moment, from outreach and education, is what I presented already on the MPA product, and that has -- I told you where we are and showed you the materials, and that's where we are. I don't know if anyone else from the St. Thomas/St. John can give us information.

MIGUEL ROLON: Alida, we will wait until August for her to give her presentation. Let's move on.

ST. THOMAS/ST. JOHN

NICOLE ANGELI: For the St. Thomas/St. John district, Nicole Greaux

-- I thought that she was working on a presentation, and so I'm sorry if she hadn't sent it, because I could have presented it for her, but she's been working to visit the different fish markets weekly, to communicate information to the fishers, to assist them with paperwork and other processes that are going on in the department, and Nicole and I meet with all the liaisons from St. Croix, St. Thomas, and St. John.

We have a monthly meeting, and then Nicole Greaux and Nikita were also participating in weekly meetings with the entire DFW staff on Wednesday mornings, so that they could receive all of the information and report back to the fishing communities, and she's been doing a wonderful job. We actually just got off of a Reef Responsible meeting, and so she may have been having some trouble connecting from that, and so she's also doing an excellent job. Thank you so much.

MARCOS HANKE: Thank you for the clarification. Let's try to squeeze Christina, for her to finalize the presentation. Miguel.

MIGUEL ROLON: No, Marcos. We already did that, and Nicole can give a presentation at the August meeting, and Christina will do the same. She has problems with her audio.

MARCOS HANKE: Okay. No problem.

MIGUEL ROLON: Just move on.

MARCOS HANKE: Thank you very much. In terms of the O&E AP presentation made by Alida, for the council members, the proposed initiatives, is there any comments, or do we have a full endorsement for the ideas that she presented?

MIGUEL ROLON: Marcos, we will meet with Alida and Sea Grant on the issue of providing more materials for schools and what have you. This is an ongoing project, as long as we have the funding, and Alida and I will be coordinating that information and prepare the materials that she needs, and, as long as she has energy and the willingness to do this, we will endorse all these initiatives.

MARCOS HANKE: It was just to restate, because all of those initiatives were, at a previous meeting, endorsed by the council, and I just wanted to hear the voice of the council members again on the same matter, but I agree with you that this was already discussed. Let's move on. The next presentation is the Nassau Grouper Critical Habitat.

JENNIFER LEE: Hi, everyone. This is Jennifer Lee with NOAA

Fisheries and Protected Resources. Can everyone hear me okay?

MARCOS HANKE: Yes, we do. Thank you very much.

NASSAU GROUPER CRITICAL HABITAT DESIGNATION

JENNIFER LEE: Okay. Great. Nassau grouper critical habitat, you probably know that, back in June of 2016, we published a final rule that implements our determination to list the Nassau grouper as threatened under the ESA. The ESA requires that, to the maximum extent prudent and determinable, critical habitat be designated at the time of listing.

When a species is listed, we're required to determine whether there are areas that meet the definition of critical habitat, and then, once critical habitat is designated, other federal agencies consult with NOAA Fisheries to ensure that actions they fund, authorize, or undertake are not likely to destroy or adversely modify the critical habitat, and so, in this case, in the final rule to list the species, we concluded that critical habitat was not yet determinable, which had the effect of extending, by one year, the statutory deadline for designating critical habitat.

Although we gathered information, through the status review and the public comment period on the habitats occupied by the species, we didn't have enough information at the time to determine what the physical and biological features within those habitats facilitated the species life history and strategy and, thus, what was essential to the conservation of Nassau grouper and may require special management considerations, and so we decided, to the maximum extent prudent and determinable, we would publish a proposed designation of critical habitat in a separate rule.

Where we are now is NOAA Fisheries did enter a settlement agreement, back on December 22 of 2020, stipulating that we must submit a proposed determination concerning the designation of critical habitat for Nassau grouper to the Federal Register by December 30, 2022, and that, if we determine proposed critical habitat at that time, we must submit, for publication in the Federal Register, a proposed critical habitat rule on that same date, and then we would have a year to make a final rule.

To determine the potential critical habitat areas, where we are now is SERO is presently reviewing available data on Nassau grouper, included the information that was completed that supported the ESA listing, the proposed and final listing rules, and then recent biological surveys and reports and peer-reviewed literature, and so, really, we're working with our Science Center

and the NCOS to ensure that we're using the best available information, and this includes making sure we have all the information on the presence of the species in U.S. waters.

Potential critical habitat areas include the east coast of Florida, areas around Puerto Rico, and areas around the U.S. Virgin Islands, which is why we're giving you this update, but, at this time, I really don't have any more detailed information to share with you about potential areas, and so we'll just keep you posted.

If you want more information, you can reach out to me after, or Dr. Tonya Bolden is the point of contact on this developing critical habitat rule, and, of course, the council will have an opportunity to provide comments, if critical habitat is proposed, and so a comment period will automatically be included, if a rule is published, and so that just gives you a little bit of an update on where we are.

MARCOS HANKE: Thank you very much for your report. Any questions? I have space for two questions. Hearing none, thank you very much for your presentation. The next presentation is the Queen Conch Status Review Update.

QUEEN CONCH STATUS REVIEW UPDATE

JENNIFER LEE: Thank you, and that's me too. On this one, I don't have to go into a bunch of the background, because the last update you had on queen conch was at your June 2020 meeting, and Jocelyn gave you a brief presentation reviewing the background.

We do have an ongoing status review, and I just didn't know if -- Our status review team for queen conch is comprised of seven experts in queen conch biology and endangered species management. Where that team is, is they have developed a comprehensive status review that assimilates over 500 references, and the draft document is being prepped by the team now for independent peer review in the coming months.

Once the status review is complete, NOAA Fisheries will then need time to review the report and prepare a final determination, or a determination and a proposed rule, if warranted, and there will be an opportunity for public comment. As a reminder, the status review won't be released until NOAA Fisheries has determined whether listing as threatened or endangered is warranted.

Our best -- I shouldn't say our best guess, but we anticipate making our determination sometime between late this year and May of next year, is the rough timing, and so we'll keep you in the

loop, of course, and, as I said already, as with any proposal, there will be an opportunity to comment, if there's a proposed rule, and, from there, the agency would then have the one year to make a final determination, if there was a proposed rule.

MARCOS HANKE: Thank you, Jennifer. Any questions? We have space for two questions. Hearing none, thank you very much for the update and for the presentation, Jennifer.

JENNIFER LEE: You're welcome.

MARCOS HANKE: The next presenter is the Puerto Rico Coral Reef Monitoring Program.

PUERTO RICO CORAL REEF MONITORING PROGRAM AND VISUALIZATION IN MARINE BIODIVERSITY OBSERVATION NETWORK

MIGUEL FIGUEROLA: Good morning, everybody. My name is Miguel Figuerola-Hernandez, and I'm a contractor, as a coral reef specialist, for the Puerto Rico Department of Environmental and Natural Resources, and for CARICOOS as well. I'm working on supporting their database management needs and expanding the Puerto Rico data access and information access of the Puerto Rico Coral Reef Monitoring Program and supporting the development of integration of biological datasets to the MBON data portal, which is a network of projects and people working to integrate biological datasets to organizations around the planet, and I am happy to be supporting this task here in the Caribbean.

I will be showing, briefly, the background of what datasets are available from the Puerto Rico Coral Reef Monitoring Program, or PRCRMP, and then how to access that data and the visualization tool that has been developed with MBON.

The PRCRMP gathers several datasets, in terms of the benthic and sensile composition, and they estimate abundance, based on cover percent and number of colonies for corals and major benthic groups. Dr. Stacy Williams is the benthic lead in this monitoring program, and she's been also annotating sponges and algae to the species level, so that you can get species richness in more than just corals in the monitoring stations, and there is also estimations on the topographic complexity of the reefs and fish and marine invertebrate assemblages are characterized as well, in terms of individuals per thirty meters squared for five replicated transects of ten-by-three meter belt transects and a subset of fish species that are commercially and ecologically important, such as key herbivores and the snappers and groupers and bigger predators.

They are also characterizing an extended version of that thirty-by-three-meter transect, so we get the -- Recently, we are getting individuals by sixty-meter squares, and, previously, they would do an active search census for thirty minutes to estimate the abundance of key species.

For those subset of commercially-important species, we also get estimations on their sizes, and so we have been able to estimate their biomass and derive a dataset on fish biomass for those subsets.

We have developed as well a metadata spreadsheet that has all the information regarding coordinates and some geographical attributes and information on the sampling effort in each of the stations in the PRCRMP, and I really want to emphasize, and this is really important, but, if you're interested in getting information from this data, because the frequency of this across the stations has been variable, and you can get precisely how many years, how many visits, and there are available data for every station. Looking at this, the habitat classification database, you can get that and select your data subset of interest.

We have developed supporting documentation for users of this data, and there are documents with all the field methods and data definitions, and these are archived in NOAA's National Center for Environmental Information, and there is the links for these documents in this presentation, which I have shared with the CFMC, so it can be distributed.

There are several publications that can give you more information on some of the principal findings of the PRCRMP, and it's beginning in 1999, and there is a list of them here, and some of them are in the peer-reviewed literature, and others have been research theses from students in the Department of Marine Sciences of the University of Puerto Rico, and there are links for those publications here, too.

There are annual reports that will summarize as well key findings, every cycle of monitoring, and they are all listed in the DNER coral program website, which the link is right here as well, and these reports are good for exploring any major changes that occur year to year as they go to the stations, and also get descriptions of the physical conditions in each site.

The database, since 2019, we have been compiling all of this data collected into a single database, which contains all the datasets that I previously mentioned, and that is archived in NOAA's

National Center for Environmental Information, and, more recently, it was translated, so that it could be archived in information systems. From there, the data can be digested into the MBON data visualization tools, which I am going to show really quick.

If you go to the MBON data portal, there is the address right there, and you can go to the data catalog and just type in here "PRCRMP", and you will find several -- You will find two layers, one for the rugosity measurements and another layer for the occurrence and coverage, which includes all the abundance estimations and biomass for benthic and fish assemblages.

When you click on these layers, you will get a description of this dataset and what measurements are available there, and you can also get the metadata URL right there, and it will take you back to the NOAA NCRI archive, so you can get the data format from there, and, also, down in this page, you can find the source link of this data in MBON, which is the database translated.

Once you -- If you want to visualize these data layers, you just click there, and you add them to the map, and, here in the upper tab, you find the icon that says "map", and then you can upload any layer which is within the MBON data catalog, and you can change base maps, and you will get an automatic range of values here in the color to start visualizing.

Some other features, which are really cool, is one of the base layers is the NOAA nautical charts, and so you can explore the distribution of these stations across the Puerto Rican insular shelf. You get several filters, here in the right panel, to select the different measurements or variables that are being collected by this monitoring program, different species groupings, and you can select by common name, and there's also an advanced filter down there that you can do your browser data, according to the taxonomic classifications of species of interest.

In each station, if you hover over the points -- If you, for example, go to stations around Desecheo, and you hover over the point, depending on what species grouping you will selecting, you will see a pop-up that will list the dominant species for that measurement that you are selecting.

You can also click on the stations, and there will be a histogram graph that will show you the time series for that particular measurement selected, and you can also filter by a temporal scale, and you see, down there, the time bar, and so there are several features here, and there are more things to do with this tool, like create data views and to compare datasets and whatnot, but

this is just a brief summary of a product that is available, and we've been doing outreach efforts, and so we want to make all stakeholders aware that you can explore what benthic and fish data is available and visualize it with this tool.

Some of the ongoing work right now is we're working with the USVI Department of Planning and Natural Resources and the University of the Virgin Islands to integrate the territorial coral reef monitoring program of the Virgin Islands into the MBON data portal, and there is a lot of very important benthic and fish information there too, from long-term monitoring since the early 2000s, and we also got mesophotic reef characterization data from the Caribbean Fishery Management Council that we're currently translating, with the help of Rich Appeldoorn and Manuel Nieves from the University of Puerto Rico, which are helping in this translation process.

Finally, also, we're working with fish assemblages of natural and artificial reefs in the Puerto Rico dataset, which includes data on the seasonality of these fish assemblages, and it was a masters' thesis project from Manuel Nieves and the University of Puerto Rico, and all these datasets -- What we want to do is basically develop a Caribbean hub within MBON, so that we can have access and visual and multiple biological datasets available in the region.

Thanks to the collaborators, and this process of making data and information publicly available is not trivial, and it takes a lot of communication and collaboration between different parties with different resources, and so we've been lucky to align priorities between these different partners and work towards a goal. More partners are jumping onboard, and so we're really happy to see this expand in the near future. If there is any questions and follow-up, you can contact me through this email, and now Reni is going to go over what the data has told us in the recent monitoring years.

JORGE GARCIA-SAIS: My name is Jorge Garcia, and everybody knows me by Reni Garcia. I have been acting as a principal investigator of the Puerto Rico Coral Reef Monitoring Program since 1998. We have had several years without any monitoring surveys, but, since 1999, we have carried on about seventeen or eighteen monitoring surveys, to date.

Today, what I am going to be presenting here is more or less -- It's not a comprehensive analysis of the results of the program, or even of the recent surveys, but it's just for you to get an idea of what kind of information is listed with these annual surveys and throughout the monitoring program, and this

information is probably going to be of more and more importance for fisheries management, as the Caribbean Fishery Management Council is moving towards ecosystem-based management strategies or approaches.

The program, what I am trying to present here, is some overview of the sampling design methodology, the oceanic background to the 2018 and 2019 reef monitoring surveys, and so the status of the reef stations, in terms of coral cover, which is what we use as an indicator of ecosystem health, and the species composition and patterns of benthic community structure. Also, monitor the temporal variations in reef structure by the main sessile benthic categories and for all the monitoring surveys contained into an assessment of the status of the fishery, in terms of its density, the taxonomic composition, and the fish community structure.

In terms of the sampling design, the program includes forty-two reef stations that are surveyed in two-year monitoring cycles, and that is twenty-one stations per sampling event. The locations of reef stations have been arranged to provide for a depth, distance from shore, and geographically stratified sampling design.

Sessile and benthic characterizations are based on five replicate ten-meter-long permanent transects, or reef stations, and the placement of these transects are not random. They are placed in sections of optimal coral growth, and what we want to see is the change from year to year and over temporal scales, and so it's not a random approach, at all. Transect surveys are surveyed by continuous intercept techniques, which provide a great deal of information, as you gather approximately 964 data points, or transects.

Quantitative fish and invertebrate characterization are based on the same five replicate set of transects on a ten-by-three belt, and they include determinations of density and species richness centered on the benthic transects for benthic assessment.

These transects of ten-by-three are expanded to twenty meters, for quantitative characterizations and size distributions of large commercially-important fishes and reef herbivores, including doctorfish, parrotfish, and then also it includes lobster and queen conch and some of the larger sea urchins. The surveys include high-resolution digital photography for each reef station, and we use both a parametric and non-parametric comparative and multivariate and statistical approaches for data analysis.

Here is the arrangement of the forty-two different reef stations, many of which include three depths, Desecheo, Rincon, Mayaguez,

Cabo Rojo, La Parguera, Guanica, Guayanilla, Ponce, and also in the east coast. We try always to arrange, for a given site or area, to have three depths, so we can use the three depths as a part of the stratified design, and sometimes, most times, these three depths also include considerations of inshore and offshore patterns, or gradients, which is one of the most important water quality gradients that we have on our island, at least on the shelf.

Since this presentation was mostly to present the variations, or the status, from the previous survey to the next one, it's mostly -- The results are more -- They reflect more the impact of the hurricanes on the benthic and fish community structure of these reefs, and so we know we have these huge hurricane events in September of 2017, and some of the impacts associated with the hurricane towards the benthic and fish communities include abrasion, scouring, breakage, and displacement of reef biota, including corals.

Then the advective and turbulent conditions were displaying pelagic, small pelagic, fishes. Nutrient enrichment associated with the massive river loadings and upwelling. The increased water turbidity associated with that suspended sediment and localized salinity dilution and temperature reductions in amplified river plumes. The survey ended in 2019, before the 2019 winter coral bleaching event was started, and so what I'm going to present are the results that were evident before this coral bleaching event.

These are the huge wave, significant wave, heights associated with the hurricane. This is the one associated with Winter Storm Riley in March of 2018, and it also affected the result of this study, and there were also twenty-foot waves.

In terms of the 2018 and 2019, which comprise the latest cycle for which we have data, and now we are working on 2021, this is the kind of data we get on a typical annual survey, or a cycle, monitoring cycle, and here are the forty-two reefs, and the mean percent substrate cover is on the Y-axis, as an indicator of coral reef health, and so that being typical of all coral reef monitoring programs, and these are the reef stations, and here are the species of corals for each reef, the percentage composition of each of the species.

For this set of reefs, we have the Orbicella species complex representing, on the average, 38 percent of the total coral cover, for all the reefs, and the Acropora species, mostly palmata, is 16.7 percent of all coral cover. The mean percent coral cover on these reef arrays is a mean of 22.5 percent.

Because of the recent relevance in coral diseases, we are now incorporating coral prevalence, coral disease prevalence, for all the reefs, reef stations, and so, for the previous year, for this previous cycle, we examined a total number of 2,322 colonies, with a mean disease prevalence of 5.3 percent. In this previous cycle, Siderastrea siderea was the main species affected by coral disease, with 39.8 percent of the total colonies affected were from Siderastrea siderea, with Orbicella faveolata/franksi also pretty high, with 22.3 percent. This is a photo of the disease affecting Siderastrea siderea.

For benthic algae, which is the main component in terms of reef substrate cover for all the reefs, we have the main components not actually by species, but by groups of algae, with turf algae and peyssonnelid algae, and it's the red algae recently invading our reefs. We have fleshy algae, the lobophora, the crusting algae, and then the coralline algae, and then even other algae.

Based on the main benthic categories across the entire forty-two stations for the 2018/2019 monitoring cycle, this is the average of them all. We apply -- Aside from the quantitative annual analysis of variation, we include analysis of community structure, and so this is the distance -- This is a similarity matrix based on the benthic variables.

These are factors in the sampling design, such as depth, to separate and to identify these patterns of different -- Of similarities between stations. We used the species as the multivariable set to essentially explain, or quantify, what is the relevance of these variables in terms of explaining the similarity, or dissimilarities, between reef stations. As you can see, for example, in this one, the Acropora palmata, or the Acropora species, are more common in these shallow reefs.

Here, also, among other coral species, there appears to be a pattern of being more abundant in the five-meter stations. The Orbicella, in contrast, appears to more prevalent in stations that are deeper.

However, using other factors, other factors would explain the distribution and the similarity among the community structure of these stations, and we use here the geographic location, and this is the different coasts, and we see that, here, there's a pattern of reefs that are all from the east coast that do not actually follow too much different variations associated with depth.

When we look at the variables that are causing the similarities,

the similarities between these reefs, and the dissimilarity between these and other reefs in the sampling program, we see that these are the stations that are highly impacted by crustose coralline algae, which, right now, represents a threat to the quality of our coral reef resources. This is a photo of ramicrusta invading our reefs. This is one of the reef stations, in Vieques, I believe.

The other type of information that we produce every year is the differences between the previous survey and the most recent survey, and so here is the variations in percent coral cover, on the positive and on the negative. The gray bars represent differences that are not statistically significant, and, in this case, for example, we see that most of the differences were associated with reefs in shallow areas, at five meters, or twenty meters, and these are all the reef that appear to be more heavily hit by the hurricane, and so shallow areas were much more vulnerable to hurricane effects, and, in Desecheo, for some reason, the reefs over in Desecheo were hit pretty strongly, particularly this one at twenty meters.

Actually, one of the most important aspects of this message, of this slide, is that this program has been able to detect differences above 20 percent, which is very good compared to all of the different methodological approaches that are used to detect change in coral reef monitoring programs.

Another aspect of the components of the reef that we monitor that suffer mostly from the hurricane effects were the gorgonians, were the soft corals, and we have all these significant differences on the negative side for gorgonians with the current reefs. It's an overall change of almost 15 percent.

This is the differences in algae, and these are actually percent change, and so these look like very big, but they are very small components of the overall component of the benthic structure of the reefs, whereas these increments are very much related to species that are much more abundant, or the groups that are much more abundant, in the reefs, and so it was an overall increase of two important algal components, both in the fleshy and in the lobophora, between monitoring cycles.

In terms of the fish, we see pretty much the same approach, in looking at the overall comparison of density, mean density, for the reefs. In this case, we have a fish that is extremely dominant, which is the Coryphopterus personatus, the masked goby. This is the fish, and this one over here is a real photo from our reefs, and this fish is a planktivore. It's small planktivorous goby

that hovers in schools below reef ledges.

Here, you have a much better view of it. Many monitoring programs do not deal with this small species, because they're kind of problematic, or they're limited by their sampling approaches to count them, and I decided to include them, in part because we have billions of them, and, as the aquarium market gets to be more popular in Puerto Rico, or everywhere in the world, these fishes are being sold at almost twenty-six dollars each, and so, in some ways, it's important.

In my opinion, it's not important because of the cost, or because of its value, in the open market, but because it probably represents that it's a keystone species in transferring plankton, plankton energy, towards higher levels of the food chain in most of these reefs, perhaps influencing the recruitment of commercially-important species that are piscivorous, top predators, or along the web of these top predators.

These are the arrangement of species for reefs, and we see that there is some different patterns in the community structure of these fish, and we apply the same kind of an approach as a multivariate approach to analyze the differences in community structure between the reefs. Here, we see a clear difference of this between this and other reefs in the station set of reefs, and this was -- Essentially, those that were very highly dominated by Coryphopterus personatus, which is a zooplanktivore.

Aside from the species considerations, we gathered these -- We clustered these species assemblages into main functional groups, such as herbivores, zooplanktivores, small and medium and large carnivores, spongivores, and scavengers, which you're basically talking about lobster.

We can start to discern patterns based on these functional groups, and we can see that, for example, that herbivores are much more common, or tend to be more common, on shallower reefs, closer to shore, and so zooplanktivores show exactly the opposite trend, being much more abundant, or more prominent, on the deeper reefs that we monitor.

Likewise for the mid and large carnivores. There is a lot of variability, but they tend to be like that and give us some inference of where are the -- What the community structure is made of in the different reefs by depth. This is spongivores and corallivores. They tend to be more abundant also on the deeper reefs, and essentially I am presenting here the distribution of lobster, and lobster usually come up whenever you least them expect

them, and so we haven't seen any pattern in depth related to lobsters.

Here we see the same thing, the same approach, with the benthic, the differences in density between one survey and the other, and here we see the change is very small, the overall change is very small, and some differences, both negative and positive, associated between surveys.

The difference that we have seen is a part of the whole correlation between coral -- Between the fish density changes and the changes in density of the dominant fish, which is Coryphopterus personatus, and it's a driver of density variations in our program.

Here is the same analysis for fish species richness, and there is very little difference, significant difference, overall between one survey to the other, and it means that most of these differences are mostly related with the density of a single species, but not of the overall -- We have not noted an overall change in the community structure of the reef, and so we have density variations in one species, but not necessarily reflecting on the community structure right away, but with potential implications for long-term and mid-term impacts if these dominant fishes do not recuperate.

Looking at the changes between surveys of the large carnivores, and so we have included here the yellowtail snapper and the graysby and coney and the snapper groupers, and these are the lionfish, and these are the differences, between here and here, but I want to highlight these two findings for red hind and increasing the red hind between surveys and a decrease, a drastic decrease, in the lionfish between surveys, because these are trends that we have seen from several years here, and these same observations we have seen in the mesophotic monitoring program that we run for the Caribbean Council. Those appear to be consistent throughout the shelf.

We also do the same with the main reef herbivores, and these are the larger ones, the doctorfishes and the parrotfishes, and we haven't seen the differences to be significant during this cycle, and that is probably associated with the hurricane effects removing most of the smaller fish that recruit into the reef, and so I believe that that is the same factor that is affecting the density variations of masked goby in the reef, and perhaps of many other small reef fishes that cannot hold on to their habitats in the reef when the extremely strong surge and wave action associated with hurricanes impact these reef communities.

I believe this is it. The next one is for questions, if any, and I don't know if you have time for that, but I am available for questions, not only regarding this specific presentation, but for any aspects associated with the Coral Reef Monitoring Program. Thank you very much.

MARCOS HANKE: Thank you, Reni. We are very late on time, and the presentation is amazing, and let's make one question to Reni, and then we will move along. Hearing none, you can interact with Reni using the chat, and that will give you the opportunity to learn a little more and to answer your questions. The next presentation is USVI Compatible Regulations and Carlos Farchette.

USVI COMPATIBLE REGULATIONS WITH FEDERAL WATERS

CARLOS FARCHETTE: Thank you, Mr. Chair.

MARCOS HANKE: Thank you, Carlos. I would remind everyone who is presenting now to try to be very, very effective with the timing of your presentation. Go ahead, Carlos.

CARLOS FARCHETTE: Okay. Well, right now, we have no updates on the compatible regs discussion. We did, however, form a sub-committee of our local fisheries advisory panel, or our advisory committee on St. Croix, to look at both federal and local laws. However, about maybe six months ago, we were given a high-priority task by Director Angeli to work on a proposed fishing, commercial fishing, license program recommendations for the Commissioner.

Since we have an eleven-member committee that really are volunteers, and we started like meeting every two weeks. However, it got a little burdensome, and so we started meeting monthly, and we finally, pretty close to six months later, were able to vote on eleven recommendations to forward to Director Angeli for the Commissioner.

I am hoping that, maybe in the monthly meeting for May, for the FAC, we will be able to put compatible regulations on the agenda, but, first, I will have to meet with Director Angeli over the phone, before the May meeting, to see if it's possible to have that on the agenda, and that's what I have.

MARCOS HANKE: Thank you very much, Carlos. The next presentation is the Recreational Fishing License Program for the USVI.

RECREATIONAL FISHING LICENSE PROGRAM FOR THE USVI

NICOLE ANGELI: We just wanted to give an update and let everyone

in the community know that we are currently drafting rules and regulations to have submitted for public review and comment, and our fishing advisory committees have reviewed those, and are sending comments back to us on the recreational licensure program, and we'll be providing more updates as we have them, and especially as we have concrete dates for public review and comment. Thank you.

MARCOS HANKE: Thank you, Nicole. We have a presentation for the electronic data reporting from the DNR Puerto Rico, and I think it's going to be presented by Daniel Matos, I believe.

PUERTO RICO ELECTRONIC DATA REPORTING

DAMARIS DELGADO: Yes. Thank you, Mr. Chairman. Daniel Matos will be presenting our report.

MARCOS HANKE: Go ahead, Daniel.

DANIEL MATOS: Hello, everyone, and good morning. Thank you. This talk is about the Puerto Rico electronic trip ticket and how it's going for the last year, our achievements, and the challenges we have.

I want to acknowledge The Nature Conservancy, NOAA Fisheries, and the Department of Natural and Environmental Resources for the help and support in this project, and also to Shellcatch, a company who developed the electronic reporting, or the electronic trip ticket system.

Some history facts. First, the Shellcatch e-reporting project started the design in early 2017, but Hurricane Maria delayed the project several, several months. Finally, in April of 2020, at the start of the COVID-19 pandemic, Honorable Rafael Machargo, DNER Secretary, approved the official use of e-reporting by commercial fishers, and so, right now, we have a complete year using the e-reporting, or the electronic trip ticket system. I have to mention that, since 2017 and today, the platform, the e-reporting, has been updated twenty-three times, and so we have learned a lot in this way.

Achievements in the first year, our first achievement is the 749 fishers have been registered in the e-reporting application. This is approximately 62 percent of the total fishers, if we assume we have approximately 1,200 commercial fishers, and these fishers reported 6,259 fishing trips. 6,259 fishing trips have been reported. Also, the 749 fishers reported, or registered, 512 fishing vessels. The most important thing is that fish and

shellfish have been reported 332,333 pounds, a lot of threes, and so it's a good achievement, and we are very happy for that.

Another achievement in the first year is how the fishing trips have been reported by gear. Scuba divers have reported 4,363 fishing trips, and the next fishing gear most reported was fish and lobster traps, 2,052 fishing trips, followed by the bottom line, or the deepwater snapper fishery, and that's 1,135 fishing trips. Then the handline reported 1,089 fishing trips.

Let me tell you about the top five species reported in pounds during these first years in the electronic trip ticket system. The spiny lobster reported 85,003 pounds, followed by the silk snapper at 40,172, and then the queen conch at 31,525 pounds. The dolphinfish was number four in the electronic trip ticket system, with 29,547 pounds reported, and the fifth position is the queen snapper, with 19,025 pounds reported. These five species account, approximately, for 65 percent of the total weight reported in the e-reporting.

Let's talk about the challenges. The first challenge, and this is not a personal finance problem, but it's very similar, is to find sources of money to continue this project. We need $59,000 a year to run e-reporting and keep enhancing the best assistance and service to fishers, and so we need to identify some sources of money to continue with this important project. This is our first challenge.

Our second challenge is we need to attract more users to the e-reporting, because we have 749 fishers, but we continue to use the paper, or traditional trip ticket system, and the paper -- The fishers reported, for the last year, 795,000 pounds, and, also, they reported 15,355 fishing trips, and so we have one-third of the reports came in the electronic trip ticket system, but, in the traditional paper trip ticket system, we had two-thirds, or 66 percent.

Our last challenge, and it was said, yesterday and today, a lot of the challenges, in many of the sub-committees of the Caribbean Council, is to continue to educate and motivate the fishers to provide better data from their reports to us, and this is the challenge we have, and we have to support Wilson Santiago's efforts in education to the commercial fishers, and we have to support Sea Grant and other agencies who are working to continue to educate and to receive better data. Finally, we are responsible to do the best management possible to the fisheries resources.

We are in the beginning of the long trip with the electronic trip

ticket program, and let's enjoy the landscape. We will have fun, and we will learn a lot, and so we are enjoying this trip. I don't know if we have time for some questions.

MIGUEL ROLON: Marcos?

DANIEL MATOS: Do we have time for questions, or are we finished?

LIAJAY RIVERA: We do have questions in the chat.

MIGUEL ROLON: Kevin McCarthy has a question.

KEVIN MCCARTHY: Thank you. Thanks, Daniel. That was a great presentation. I know we've talked about this in the past, but remind me. These data currently -- Once they're entered, they're not going into APEX, right, and so, because of that, I would add a fourth challenge to your list, which is to get these data in the same database as where all the historic data and the current paper forms are going, so that we've got a single repository for the data, and so that's a fourth challenge that you and I can discuss, and whoever else needs to be in on that conversation about how we might move forward on that, but that's -- I guess that's just my comment, and we'll need to start those discussions.

I also think that this is a great opportunity. As you move forward with more fishers reporting this way, you can start to think about how you might want to tailor each of those reporting, the reporting forms that they're doing electronically, and you might have different questions from a trap fisher than you would from a diver, for example, and so that's some other things we can talk about.

We've got some experience dealing with electronic logbooks in the Gulf and the South Atlantic, and so we should continue our conversations that are always productive, and so thanks very much. Great presentation.

DANIEL MATOS: Thank you. Thank you very much, Kevin, and, yes, we are working to transfer all the data to NOAA, and so hopefully we will complete this challenge very, very soon. Thank you.

MIGUEL ROLON: I have Tony Blanchard.

TONY BLANCHARD: Good afternoon, Daniel. Good presentation, and I'm on the same line with Kevin McCarthy, but what I am in full support, where I think the council should support this electronic monitoring, this electronic program, but what I don't want to see is that the council gives money and we don't get back anything to see to the end result, and I'm not saying that that's not the case

with your program, but I'm going to draw a reference to the recreational program in the Virgin Islands that was headed by the former director.

That program was well supported, but the council -- We really liked the direction it was going in, and it was positive and everything, and we even had a website set up that you take a picture and the information goes to that website, and, all of a sudden, it was dropped, and nothing came out of that, and -- (Part of Mr. Blanchard's comment is not audible on the recording.)

At the end of the day, I don't think that the council should give, in my opinion, money without getting something out of it at the end result. In some cases, we give money, and I think we just give money, and then we don't see what comes out of the money that we gave. In other words, there is nothing in our hands to look at, but I'm not saying that that is the case with you, and I'm just bringing this point to the council, that I think we need to have some -- (Part of Mr. Blanchard's comment is not audible on the recording.) When you take this money, that we get you.

DANIEL MATOS: I'm so sorry, but I lost a good part of your question, and I have problems with the internet here.

MIGUEL ROLON: No, the problem is -- Tony also has problems with the audio, and a couple of other people, also. They have problems with the electricity going back and forth. We have now Maria Lopez, and she wants to address a question to you, Daniel. Maria.

MARIA LOPEZ: Sorry if I missed my turn earlier, and I must have lost audio as well. Daniel, thank you for your presentation, and thank you also for always being available to answer all of our questions and assist us.

I have a question about if you have seen, or are you aware, of any duplication in the data, in the way that the data is interpreted, for example if you have fishers that are submitting both in a paper form and electronically, and how is that addressed? My second question is, given the current data lag that we have right now for landings, how do you think this would help to reduce that data lag and what else we can do to move this forward. Thank you.

DANIEL MATOS: You're very welcome. I am always available to help all my colleagues. It's such fun for me. Your first question is do we have duplication. At the moment, we don't see that, because when we train the commercial fishers, we mention that they have a lot of benefits to do the electronic trip ticket, the e-reporting, and so they do that and they don't have to write a lot of things.

For example, in this part of the trip ticket, they have to write their name and their license number in every single trip ticket. If they have twelve fishing trips this month, twelve times they have to write their names and their license and everything like that, and so now they just have to write that once, and so they log that in, and they are not doing twice the job, and so we don't see, at the moment, any duplication. If we have it, we assume it's small, and, when we put everything together, we will be able to see that happen, but, right now, we don't see any duplication. Your second question -- I forget it. Sorry. What was your second question?

MARIA LOPEZ: I was asking about the data lag that we currently have with their landings and if you think that this is like the right path, obviously, to minimize that and what else we can do to make this happen, if this is the way to go.

DANIEL MATOS: Good news. Right now, we are -- We do not have any delay. Right now, we are entering -- The trip tickets that we received last week are entered this week, and so we made a big jump, and we are very up-to-date now, and we enter the data. The official data, we enter that daily and send it to NOAA Fisheries. What we need to do is to transfer the data from the e-reporting to the NOAA data form as soon as possible, but I have asked for help for that for the last six months, and I'm still waiting for a move from the Miami Lab, and so hopefully, very soon, we will have everything together.

MIGUEL ROLON: Daniel, you have a question from Andy, followed by Richard, and Kevin McCarthy. Andy.

MR. STRELCHECK: Daniel, thanks for the presentation, and I certainly sympathize with you, in terms of getting fishers involved in the program and just the challenges with reporting and validation, and so it certainly looks like you're doing a lot of great work.

My question really is -- We heard yesterday from Todd Gedamke about work underway, obviously, with catch validation, and I'm wondering if there's opportunities to partner with him, given the kind of ongoing work, to help get the word out about your electronic reporting program and just to have fishermen more knowledgeable about the requirements for that program, and so I just wanted to offer that as a suggestion, and maybe you're already working with him.

DANIEL MATOS: We would be glad to help and to collaborate with

this project too, and so just send me an email, and I will be glad to help.

MARCOS HANKE: Is there anybody else in the queue, Miguel? I lost my audio for a little while.

MIGUEL ROLON: We already said we have Richard and then Kevin McCarthy, and so it's Rich Appeldoorn's turn.

RICHARD APPELDOORN: Daniel, it's very nice progress that you're making on this, and it really sounds good. This is sort of a follow-up in a different form of question that Maria made, and that is you have almost a third of your landings coming in with this e-reporting system, and how much does that translate into a reduced workload for you and your staff?

DANIEL MATOS: Well, right now, my staff, especially the port samplers, they have to read every single entry for the commercial fishers, and they read it carefully, really for more information, of do we have errors, and so every single data entry in the e-reporting the port samplers are responsible to read and edit and then they have to approve the entry.

After they approve that entry, the information moves to the database, and so, also, we are updating the paper forms, because one-third of the data is coming through the electronic trip ticket system, and so that is more time to going out and collecting biostatistical data, and so we are moving to collect more biostatistical data and have more time for that and other stuff.

MARCOS HANKE: Thank you, Daniel. Who is the next one, Miguel?

MIGUEL ROLON: Kevin McCarthy.

KEVIN MCCARTHY: Thank you. Hi, Daniel. I just wanted to circle back to Maria's question as well, and just for the general group, because I know you already know all of this, and so the Science Center and Daniel and his staff have been working together for a long time, pre-dating me, but one of the things that we do is to fund a position in Daniel's lab that is a data entry position, and so that did a lot to catch up, and they've been caught up for a while now, but to catch up on the backlog of data entry. Years ago, there was a lag, and so the data entry side I don't think is the big lag in data availability.

It's a drain on personnel, having to key punch in those data, and so it's great that this e-log program is moving forward, and relieving some of that burden, but the other -- The lag right now

is in the correction factor availability, so that it can be applied to the reported landings and come up with the estimate of the total landings, and so I think I mentioned yesterday that we'll be working with Daniel and his staff this year to try and automate that process.

There's a couple of steps in it, and we think that some of those steps -- We can get the correction factors available a lot more rapidly, because it will be a lower burden on the staff if we've got it automated in the background, and, once the data are entered, we can let the computers do all the work and spit those correction factors out in a much more timely way, and so that was my comment, just that there are initiatives underway to get the data lag issue under control. Thanks.

DANIEL MATOS: Thanks a lot, Kevin, for all the support from Miami Center to this project. Thank you very much.

KEVIN MCCARTHY: Well, what helps you helps us, and so we're happy to help.

MARCOS HANKE: Thank you, Kevin. Is there anybody else in the queue, or we are ready for lunchtime?

MIGUEL ROLON: You are ready for lunch, but you have a presentation pending, and so probably we should -- You can have lunch now, and then, first thing after lunch, you can have the presentation pending from the recreational fishing license program from the U.S. Virgin Islands, if they have things they have to present, because already Carlos covered what they were going to do, but I don't know whether Nicole Angeli would like to add something else. Maybe we can break for lunch and come back and ask the same question again. When do you want us back, Mr. Chairman, at 1:00?

MARCOS HANKE: Let's come back at 1:00. I'm sorry with my audio. 1:00, we are back on the meeting. Thank you.

(Whereupon, the meeting recessed for lunch on April 28, 2021.)

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APRIL 28, 2021

WEDNESDAY AFTERNOON SESSION

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The Caribbean Fishery Management Council reconvened via webinar on

Wednesday afternoon, April 28, 2021, and was called to order at 1:00 o'clock p.m. by Chairman Marcos Hanke.

MARCOS HANKE: We are going to give five minutes for Christina in the beginning of the afternoon session for her to finish the presentation that is very important for the council. Go ahead, Christina.

SOCIAL NETWORK REPORT

CHRISTINA OLAN: Good afternoon. Thank you for letting me present. I appreciate it. As I mentioned before, there are numbers of the statistics of our social media pages. If you have questions, just let me know, and I will not go in-depth today to the statistics.

The content that we usually publish on our social media pages is related to seasonal closures. Meetings and activities, pictures and videos, collaborations that we have among agencies and other organizations, and NGOs as well, announcing new publications and educational materials and the CFMC monthly bulletin. Also, we do Facebook Lives, and, with this meeting, we have started to broadcast the meeting through YouTube and also sharing that broadcast to Facebook and Twitter.

We have a lot of collaborations between our organizations and the council, and we have been doing Facebook Lives with AmandOceano, and, also, we have been producing content with GCFI, and I have to say thank you to Fadilah Ali, who is the person who worked with me creating that content, and also to Puerto Rico Sea Grant.

Also, we published Martes de Manati, which is a series to create awareness or continue letting people know about manatees and predation of manatees, and we also had a meeting with AmandOceano and Mi Playa Limpia and Little Women, Big Sharks, to start developing content among the organizations and the council. also, I have to say thank you to JJ Fishing Adventures, and he is a little kid, and his mom and dad have a social media pages, and he pitches in content, and he loves the content that we produce, and he shares the content, and so thank you very much to JJ Fishing, and, also, of course, fishing organizations, commercial and recreational, as well. I am showing there examples of what we published on our social media pages.

Also, I want to thank Marcos Hanke and Vanessa and Nelson for their ideas, and this is an example of how their ideas came together, and Marcos sent me this picture. With this picture, we published a post inviting people to identify the species, and, later in the day, we showed them the differences in the characteristics of the

species, and the idea is to engage more people and get their comments and also to continue making awareness of seasonal closures, regulations, and other facts related to ecological information of the species.

Also, we have been collaborating with MREP, the Marine Resource Education Program, and we have been sharing information to our pages to let others know that MREP continues, and they are going -- When it will be possible, they are going to do more workshops in-person.

Last year, because of COVID-19, we published a contact list of the fish markets and fishing villages and fishers that were doing delivery and carryout, and so we decided to update that list and publish it again, and this is the list for Puerto Rico, and Nicole Greaux in the USVI is helping me with the list of St. Thomas/St. John, and also Carlos Farchette. They already sent me the information, and we are going to publish the information to our social media pages, and the idea is to do a public service to fish markets, fishing villages, and fishers as well.

During the last five months, we have been publishing the monthly bulletin, where we highlight information of species, and we also invite people to watch our videos, and we highlight a fisher of the month, from Puerto Rico and also from the USVI, and we also provide information about the closed seasons, and that is an example of one of the bulletins that we have been publishing.

Here are some of the fishers that we highlighted in our bulletins. In March, for example, we highlighted Tina, and she is from Puerto Real, and, also, this month, we highlighted Julian Magras, and, in February, we highlighted Tom Daley. Thank you to Jeanette Ramos and Carlos Farchette and Ruth Gomez that helped me with the interviews and pictures of the fishers.

New videos, we have new videos on our YouTube channel, and we have the Nassau Grouper Against the Clock and Fisher to Fisher Advice on Spawning Aggregations, and, also, we have the most recent one that is Cocinando con Ita y Ta. Cocinando con Ita y Ta is a series of videos that promotes consumption of a diversity of species. We have already published one on lionfish.

There is Jeanette and Iza, and I have to say thank you to Jeanette and Iza, and also to the whole team that are working on the videos. You will continue watching them through the following months, and, again, thank you, thank you, thank you, because creating content, and also engaging people to our social media pages, will not be possible without fishers, agencies, followers, scientists, CFMC

staff, council members, liaisons, O&E AP members, fish and seafood consumers, teachers and students, NGOs, sea lovers, and thank you to Alida and Miguel and Diana and Natalia that are the team for the content that we have been producing, and, if you have any questions or comments, please let me know. The next slide is if you have questions or ideas, and so thanks again for the opportunity of presenting.

MARCOS HANKE: Thank you very much for a great presentation, Christina. Thank you, and, if you want to interact with Christina, you can follow-up through the chat with her. We're going to move along with the agenda. The next presentation is the Enforcement Reports. We're going to start with Puerto Rico.

ENFORCEMENT REPORTS
PUERTO RICO

DAMARIS DELGADO: The Rangers, this past month, they haven't submitted cases to the Legal Affairs Office in Puerto Rico. However, we learned, recently, that there is an area of opportunity to strengthen enforcement, partnering with our government, in this case, with Miguel Borges, because we heard that there seems to be a behavior of some fishers to capture protected snappers around the Rincon area, and then Miguel can't help us with enforcement, because of the regulations, as they are written.

If the fishers say, or if the fishers do not say, that their captures were within the federal waters, he can't intervene, because that's the way the law and the regulation is presented, and so we were wondering if there is an opportunity to amend the regulations, in order for Borges to be able to help us out, even though, if we don't get the information directly from the fishers as to whether they fished that protected species within the federal waters or within the state waters, and so this is a call to NOAA to check if there is a possibility for him to help us, when he may be able to intervene.

MARCOS HANKE: Did you finish, Damaris?

DAMARIS DELGADO: Yes, that's pretty much what I wanted to share, in terms of enforcement.

MARCOS HANKE: Okay. Any questions from the group?

DAMARIS DELGADO: Also, the Rangers have been continuing their patrolling surveillance around the coast, and they have been doing their trips, as typically they do.

MARCOS HANKE: Thank you. Maria Lopez has a question to you.

MARIA LOPEZ: Hi, Damaris. If you want, we can talk more about your request, to see if you can give us more specifics, to help you out, to see if this is something that our office can help you with.

DAMARIS DELGADO: That would be great. Thank you very much, Maria. I appreciate it.

MARCOS HANKE: Nelson.

NELSON CRESPO: Thank you, Mr. Chair. The only way I see that we can address the issue about the closure with the deepwater snapper fishery is establish compatible regulations, and I think there is no other way to get into that with the federal officers. I talk a lot with Miguel, and he knows my concerns about that.

DAMARIS DELGADO: Maybe it would be good to have a conversation with you also, Nelson, and talk a little bit more about that and what we can present to the DNER Secretary.

NELSON CRESPO: Definitely. Any time you need me, you can call me.

DAMARIS DELGADO: Thank you for your offering and your support, your continued support, Nelson. I appreciate it.

MARCOS HANKE: I don't see any other questions. Thank you, Damaris. We're going to go to the USVI DPNR.

USVI DPNR

NICOLE ANGELI: Good afternoon. We have a few announcements. Two new officers have been hired and are in training on St. Croix, and one new officer has been hired and is training for the St. Thomas/St. John District. All of our enforcement officers are still currently working with VI PD, and so any fisheries, boating, other enforcement issues that you have, they need to be reported either directly to the Division of Environmental Enforcement or to VI PD, so that an officer may assist, and so there are no specific fisheries updates for this meeting.

MARCOS HANKE: Thank you. The next report is U.S. Coast Guard.

U.S. COAST GUARD

ROBERT COPELAND: Good afternoon, everyone. This is Lieutenant

Robert Copeland with the U.S. Coast Guard, located in Miami. Just one thing to pass, and one of our training centers on the east coast came down recently and did training for all of our boarding officers, specifically for living marine resources training. Other than that, I have nothing specifically LMR related to pass at this meeting. Pending any questions, that concludes my brief. Thank you.

MARCOS HANKE: Thank you very much. Any questions for the Coast Guard? Hearing none, NOAA Fisheries.

NOAA OLE

MANNY ANTONARAS: Good afternoon. Thank you, Marcos. This is Manny Antonaras. (Part of Mr. Antonaras's comment is not audible on the recording.)

MARCOS HANKE: The audio is broken. Let's start over.

MANNY ANTONARAS: (Part of Mr. Antonaras's comment is not audible on the recording.)

MARCOS HANKE: Can you start over, please?

MANNY ANTONARAS: Sure. This is Manny Antonaras, Assistant Director for NOAA's Office of Law Enforcement, Southeast Division, and I wanted to run through some enforcement highlights since our last meeting in December and also update the council with some recent personnel changes.

I will start off with the USVI, and we were very happy to report that Alex Torero has reported to his assignment in St. Thomas, as the OLE officer that will be covering the USVI. Alex arrived in early March, and he has started his field training. To date, we've had several officers that have worked, have detailed, out to to the USVI, and part of that included Puerto Rico, for a training course, including Supervisory Enforcement Officer Pat O'Shaughnessy and some other officers that we've had in the division to help with field training and go over the AOR that Alex will be working and meeting with several or USVI departments or agencies. During one of these meetings, we also had a productive meeting with the U.S. Attorney's Office in the USVI.

As part of this travel, the officers conducted a number of patrols, joint patrols, with the U.S. Coast Guard, on two of their thirty-three-foot patrol vessels, and they will continue working with those folks in the future.

Officer Torero also attended the Coast Guard Regional Fisheries Training, and it was a Caribbean course in San Juan, to help accelerate his learning of the species and AOR.

During the month of March, Miguel Borges, Special Agent in Puerto Rico, conducted three underway patrols on the west coast of Puerto Rico, with CBP Air and Marine, and they were targeted, for these patrols, enforcement of the Bajo de Sico closure. During these patrols, or during one of these patrols, a vessel was boarded, approximately twelve nautical miles west of Cabo Rojo, Puerto Rico, and found in possession of thirty-two conch in the closed area, and a $1,550 summary settlement was issued to that particular operator.

A second boarding resulted in -- This one was in the area of Rincon, and, this particular boarding, the agents documented yellowfin tuna onboard the vessel without a valid HMS permit, and that one resulted in a $500 summary settlement to the operator, and then Miguel also reviewed and processed a U.S.-Coast-Guard-initiated case involving an individual that was fishing in Bajo de Sico during a closure, and the vessel was also anchored in the area, and that one resulted in an $825 summary settlement.

Going back to some of the work that our folks did in the USVI in early April, OLE officers participated in thirteen separate patrols, and those patrols included nine shoreside patrols and four that were underway. Three of them were aboard Coast Guard small boats, and these were in the vicinity of Hind Bank, and one was a patrol with Coast Guard, CBP Air and Marine in the vicinity, and that was also in Hind Bank, and so south St. Thomas.

These particular operations, all the vessels boarded were found to be in compliance, although our officers took the opportunity to conduct outreach and education with the fishers.

Just to conclude, over a year ago, we committed to an increased OLE presence in the USVI and Puerto Rico, and, as you can see from the activities that I have just shared, you can see that our two folks in Puerto Rico and the USVI are very active, and I anticipate that they will continue to do the great work they're doing with outreach and education and monitoring and patrols and investigations, and we look forward to future pulse operations in collaboration with our USVI and Puerto Rico partners and the U.S. Coast Guard. That concludes the OLE brief. Thank you.

MARCOS HANKE: Thank you very much. I want to mention to the council members that, on the training that either the Coast Guard and the NOAA Fisheries just referred to, the training for the

agents, I was able to attend and support them, representing our fishing community with fish ID and taking some samples and some things to share with the people on the training, and we have been doing this for many, many years, and I'm glad that either agencies are open to engage the community. Thank you very much.

The next item on the agenda is Other Business, and I have here an update about red hind, the update timing for red hind spawning, and it's Michelle Scharer. Are you available to speak about it?

OTHER BUSINESS
UPDATE TO THE TIMING FOR RED HIND SPAWNING AGGREGATIONS IN PUERTO RICO

MICHELLE SCHARER: Thank you. I appreciate the time to bring to you a little more information regarding the timing of red hind spawning aggregations off the west coast of Puerto Rico. My name is Michelle Scharer. I've been researching some of these areas off the west coast with spawning aggregations for over fifteen years, and, basically, this is my statement.

The establishment of three seasonal marine protected areas, known as Abrir la Sierra, Bajo de Sico, and Tourmaline, as well as the closed season in the EEZ off of western Puerto Rico for the red hind, were based on pioneering research conducted at the Puerto Rico Fisheries Research Laboratory since the 1990s by researchers like Colin, Shapiro, Garcia Moliner, McGehee, Roman, Sadovy, Rosario, Figuerola, Torrez-Ruiz, et cetera.

Since then, the assessments that have been made by Figuerola and Torrez and Marshak and Appeldoorn did not reflect significant changes in the red hind stocks off western Puerto Rico years after these closures, and they concluded that the stock was still undergoing growth and recruit overfishing, as had been previously stated by Sadovy.

Recent research that we have directed towards fish spawning aggregations specifically on the western Puerto Rico platform provide information to potentially update the protection of the spawning stock of some groupers, but, here, mainly, I refer to red hind, and so one of the assumptions inherent in the expectation of a closed area, or closed season, is that the reproductive events are contained within the extent of the closure and are sufficient to rebuild stocks and seek a sustainable fishery.

When the fish spawning aggregation is completely contained within the closed season, the spawners are all protected. However, there is evidence that red hind remain aggregated, and potentially

vulnerable to fishing, at the fish aggregation sites off of western Puerto Rico after February 28 on at least three of the past ten years.

Apparent shifts in the timing of red hind spawning aggregations in this area may indicate that a proportion of the spawning stock is significantly vulnerable to fishing once the season opens, if they are still aggregated, and so, under this scenario, the reproductive output of red hind would be reduced if fish that haven't yet spawned are legally caught. In addition, overfishing of FSAs is known to affect the age at sexual maturity and change the sex ratio of a protogynous species like red hind, which could create a possible sperm limitation for red hind in subsequent years' aggregations.

Preliminary results of research in the U.S. Caribbean evidence younger and smaller fish, lower fecundity, and skewed sex ratios for the red hind off of Puerto Rico compared to the St. Thomas red hind MCD. This is still in preparation. Changes in the phenology, and the phenology is basically the timing of these reproductive acts, has also been observed in Bermuda, although, over there, it's earlier than expected, suggesting the changes in temperature regimes may be producing shifts in the timing and duration of these aggregations.

Previous requests to the council to review the red hind closed season and requests for emergency rules to extend the date of the end of the closed season in the MPAs and the EEZ off of western Puerto Rico on years when there was a prediction of an extended FSA were based on the precautionary principle, recognizing the vulnerability of red hind spawning stocks to directed fishing after March 1, and a similar trend has also been documented for Nassau grouper at Bajo de Sico, due to aggregations extending into April of some years.

A technical manuscript that supports these observations for red hind will provide an opportunity to peer review the latest science-based information that could be incorporated into the Puerto Rico island-based FMPs. Projects that supported the monitoring of multi-species FSAs in the sites in the U.S. Caribbean for red hind have ended, although we are happy to announce that we were granted Section 6 funding for Nassau grouper, in collaboration with the Department of Natural and Environmental Resources, expected to start in 2022.

Now, the red hind monitoring of the fish spawning aggregations will require some other sources of funding, if it is of the interest of the council to continue standardized long-term

monitoring in the EEZ that could help better predict how groupers are responding to shifts in temperature regimes and how management actions could be adapted to rebuild the red hind spawning stocks. There's a little map there for you to see, but that's basically the end of my presentation.

MARCOS HANKE: Thank you, Michelle. Council members, anybody on the meeting, any questions for Michelle? Go ahead, Andy.

ANDY STRELCHECK: Not really a question, but, I mean, certainly I appreciate the information and presentation, and it's my understanding that this might have been briefly discussed at the December meeting, and my suggestion is that this information be brought forward and considered by the SSC for further consideration and that we get SSC recommendations then provided to the council.

MARCOS HANKE: Yes, and I think it's appropriate, your recommendation, and I want to hear from Richard Appeldoorn, who is looking for a turn to speak.

RICHARD APPELDOORN: I just want to reiterate a point that Michelle had brought up in her previous presentation to the council. While there were three instances in the last ten years where the aggregations were significantly into the month of March, in the coming ten years, including this year, by the way, there will be seven events where the aggregations are predicted to extend into March, and so this is more imperative that we act sooner, rather than later.

MARCOS HANKE: Yes. Any other comments or questions? I have -- As the Chairman, I would like to see this being discussed on the SSC, and to have the technical advice from the SSC, to better inform the council members and to keep discussing this on the channels that we should discuss. Do the council members have any comments to what I just said? Go ahead, Carlos.

CARLOS FARCHETTE: I agree with what you just said, Marcos. If we need to task the SSC to do this, I'm fine with that.

MARCOS HANKE: Thank you. Any other comments from the council members? Go ahead, Miguel.

MIGUEL ROLON: We just took note, and we will put it in the next agenda for the SSC, and so Graciela and I will talk to Richard as to when that will happen, and Dr. Scharer is mentioning, actually for quite some time now, that it's something in need of action, in need of immediate action, but her letter also has a point about the need for continuing this project, and she already received

money for Section 6, but, anyway, Graciela and I will talk to Dr. Richard Appeldoorn, and then to Michelle, and we will report back to you at the August or the December meeting, hopefully in August. If we have time, we can have a virtual meeting of the SSC to address this issue, among others, during the summertime.

MARCOS HANKE: Thank you, Miguel. Do we have any other persons in Other Business? Miguel.

MIGUEL ROLON: We don't have anybody for other business, but maybe public comment.

MARCOS HANKE: We are at the public comment period. Is there anybody from the public that would like to participate?

MIGUEL ROLON: One question I received from two fishers was regarding the monies from Irma and Maria and the CARES Act and the others, and they thought that we could do something about it, and I just informed the two fishers that the council does not deal, in any way or form, with those funding, but maybe, at this time, the local government representatives can give us some light as to where the money is, or the status of that.

We received some information from the Virgin Islands that the first round of money was also distributed from Irma and Maria, and I don't know the status of the others. I have a question also for the Department of Agriculture, and they were talking about the extra funding that was supposed to be allocated among tribes and aquaculture and headboats and commercial fisheries, given that Puerto Rico has headboats and commercial fishers, and it's a question, and so we have here Damaris for a turn, followed by Julian for a turn to speak. Mr. Chairman.

MARCOS HANKE: I have Damaris. Go ahead.

DAMARIS DELGADO: With respect to the fisheries disaster proposal and the direct aid for the fishers, most of the money that was allocated for that has been distributed in checks to the fishers that qualified, and so we are missing only around seven fishers, and maybe one or two additional persons that we are double-checking their information, but we are missing very few, and most checks were already issued by the Department of the Treasury, and they were handed in-person to the fishers in different activities, and so most of that was already accomplished.

There is a process of reconsideration that was presented to the people that didn't qualify for the funds. We sent letters to the fishers that did not qualify, explaining the reason why they didn't

qualify, and those reasons were they weren't official fishers, without a license by the time of the hurricanes in 2017, or they didn't comply with the statistics, the fishery statistics, or they did not submit the application on time, and we extended that period of time like two times, and the final deadline was August 14, at the time that we were receiving the applications of the fishers, and so that's pretty much the information on the fishery disaster direct aid.

We are working, hand-in-hand, with the Department of Agriculture with regard to the improvements that are going to be directed to the infrastructure of the fishers, and this means the fishing villages, the piers and ramps, that are being evaluated, and we have been going into the field to evaluate the infrastructure with the Department of Agriculture again this year, since there was a change in administration of the Department of Agriculture, and a new round of visits to the fishing villages was started, and we will probably finish those visits by June.

However, we have been compiling a lot of information regarding the needs. In the past, we consulted fishers regarding the most needed areas for the improvements, and it's important to know that we have to make sure that we do not do any double-dipping with regard to the claims to FEMA, and so that is why we have been in close coordination and communication with the State Department of Agriculture, to make sure that we maximize the use of the funds, either by the FEMA claims or by the use of the fishery disaster funds that were provided to DNER.

With regard to new funds of the CARES Act, I was informed by the Director of the Fishing Division Program with the Department of Agriculture, that NOAA has awarded, or is in the process of awarding, new funds to help out the fishers, or the fishing communities sector, and he mentioned to me that new money would be around $2 million. They are placing, already, the process to take the new applications or information from the fishers, and he already asked me to provide new information on the fishers, the fisher status, in order for them to provide this new money that is being available for the fishers, and so I don't know if anybody has a specific question regarding the funding.

MIGUEL ROLON: Damaris, one question is the monies that were distributed, that you just mentioned, that is the $400,000 plus $1.27 million, or only the $400,000?

DAMARIS DELGADO: As I understood your question, the direct aid that I was talking about was the $400,000, and that money is pretty much -- It was distributed to the qualified fishers, and, as I

said, there are some pending people, a few of them, and this is new money that NOAA has identified to help fishers, and this is going to be economic help. This will be in the form of checks, I believe, and it's not going to be through equipment or anything like that, and it's going to be a support in money for the fishers. I don't know if I answered your question.

MIGUEL ROLON: No, and that's okay, and just that it was reported to the council, after the hurricanes, that the DPNR was requesting $1.7 million extra, and the previous Secretary went to Washington and talked to Chris Oliver, but, anyway, I believe that you answered the question that I have from two fishers here very well.

DAMARIS DELGADO: The thing is that, since this money is only for fishers, this help is being analyzed through the Department of Agriculture, and new money, any additional help, just for fishers, everything is being channeled through the Department of Agriculture.

MIGUEL ROLON: Thank you very much, Damaris.

DAMARIS DELGADO: Yes. You're welcome.

MARCOS HANKE: Damaris, I have a question about the charter business, and I have many partners that are requesting information and the status of the monies that includes the charters, and what is the status of that?

DAMARIS DELGADO: I know we analyzed the charters, the charter applications, by the time that we were requesting the applications, and I believe some of them got some help, but some of them not, and we didn't receive many applications from charters, but we had a classification for charters for the distribution of the money, and we considered the charters as a sector that qualified, that was qualifying, for the money.

MARCOS HANKE: The question that I need to tell the people from the industry is what was the elements to consider the charter granted for this money? What did they need to have? They had to have a license from the DNER, or what are the requisites?

DAMARIS DELGADO: The permit that they receive from DNER. Since charters are not fishers, commercial fishers, they don't have the same category as the rest of the commercial fishers, and they don't get the license as a fisher, but they have a permit, and so, in that sense, they needed to provide that, but I can touch base with the Secretary of Education, because this unit -- The Secretary of Education was the one that processed all the applications and

reviewed if they qualified or not, and I could check more information on the charters and let you know.

MARCOS HANKE: Thank you very much. Any other questions from the group? Go ahead, Vanessa.

VANESSA RAMIREZ: Damaris, I just want to know if there's going to be any other evaluation for those that submitted the application, but at least many here in Puerto Real have not received any communication, and most of them made the application and submitted by email. Is there any way that they can communicate to someone to check it out, and is there going to be any process to check twice those applications?

DAMARIS DELGADO: Yes, and I recommend -- We talked about it, and I appreciate you letting me know about this situation, and I didn't have an idea until recently, but my suggestion would be that you write a letter -- Not a letter, but an email to the email to -- That email is constantly being checked. The emails that we receive through that address, email address, are constantly being forwarded to the right persons, and you can copy me as well, and let me know which are the fishers that have not received any communication, written or oral, about the aid, and we'll check. We'll check what is happening.

I know that we had several problems with the addresses of fishers, letters that we sent out returned back to us, and, with some fishers, they returned twice, and so there were some problems with the addresses of the fishers, and I would like to make sure that that didn't happen to these fishers, but I believe we might be still in the process of resubmitting some of these letters and letting them know about the qualification for the aid, but I hope that's not the case of the fishers in Puerto Real.

MARCOS HANKE: Thank you, Damaris. One more question to Damaris, and we have other people in the queue for public comment, and we have Lourdes. Go ahead.

PUBLIC COMMENT

LOURDES LASTRA DIAZ: Thank you for the time. I am here on behalf of Todd Gedamke, and I know he gave a presentation yesterday, and, just as a reminder, we prepared a questionnaire for any fisherman that works with traps in Puerto Rico. If you can fill it out and give us your opinions on our design and the way we are working with the traps, so we can make the best model to represent the whole island.

We have put a little bit of a questionnaire, and he will send it to the mailing list tomorrow morning, and anyone who has any commentary on it, please -- You can contact him or contact me with any questions or any advice on how to do the best trap design for Puerto Rico.

MARCOS HANKE: What is your email, Lourdes?

LOURDES LASTRA DIAZ: loulastra@gmail.com. I will write it on the chat, so you can all have it, and you are more than welcome to contact me with any questions.

MIGUEL ROLON: Marcos, you have Nicole Angeli waiting for an update, following Damaris, and then Julian also to talk.

MARCOS HANKE: Okay. Thank you, Lourdes. Thank you for your participation. Go ahead, Nicole Angeli.

NICOLE ANGELI: Thank you. The hurricane disaster relief funds, as of last week, $3.1 million have been distributed to 300 individuals, and so about ninety individuals are waiting on additional money, and that's due to their paperwork being processed, although about a quarter of that should have been released this week from finance.

Our CARES Act program, the first installment of the CARES Act program required a spend plan from NOAA, and that was just submitted this month, after review by our territorial fisheries advisory committees, and so we're hoping to have that approval soon, so that we can start the administration of the program, and the second installment of that CARES Act money also recently opened up on grants.gov, and so we're preparing the application and the supporting documentation for that procurement process, and so, if there are any specific questions, especially for fishers in the USVI, on Thursdays and Fridays, our hurricane disaster assistance person, is available at the Charles Turnbull Library, and there is someone available in the Mars Hill Office on St. Croix. You can also email us for any specific information about your specific application, and so thank you so much, everyone, for working with us and for the continued oversight.

MARCOS HANKE: Thank you very much. Is there anybody else in the queue?

MIGUEL ROLON: You have Julian.

MARCOS HANKE: Julian.

JULIAN MAGRAS: Good afternoon, everyone. I just wanted to chime in a little bit on the Irma and Maria disaster relief money. We still have several fishers, some of them still awaiting the base pay, and we have helpers still awaiting the base pay, but it's been a work in progress, and I must say that, and I'm representing as the Chairman of the St. Thomas Fishermen's Association, and I have been working very closely with fishers, and I've been working very closely with Mr. Isaac and Ms. Anderson, and, also, the finance department calls me on a weekly basis, to give me an update on checks that are being cut. I find the process to be a little slow, but we are moving forward, and, also, tied to that, -- (Part of Mr. Magras's comment is not audible on the recording.

MARCOS HANKE: We cannot hear you very well, Julian.

JULIAN MAGRAS: Which is all part of the -- I guess we have a bad connection again.

MIGUEL ROLON: What was the last part, Julian?

JULIAN MAGRAS: The last part was we're still awaiting our safety equipment, and we're still awaiting progress on our artificial reefs, but we are moving forward, and I will continue to work very closely with my fishers and with the representatives for the grant process. That's my update. Thank you.

MARCOS HANKE: Thank you, Julian. Miguel, do you have anybody else that requests through the chat?

MIGUEL ROLON: No, Mr. Chairman. There is nobody else.

MARCOS HANKE: Okay. The next part of the agenda then, after public comment, is the next date for the council meeting. Miguel.

MIGUEL ROLON: Well, the question is do we have anybody else for public comment, aside from Lourdes? I guess not. Yes, the next council meeting will be August 11 and 12, but, before that, remember we mentioned to have a special meeting on July 21, where we are going to hear from Dr. Michelle Duval as to the final touches for the five-year implementation plan.

For the next meeting, taking into consideration the suggestion by council members and fishers and so forth, we will do our best to spread the items in the agenda and provide more time for discussion, and so the next meeting in August, the 11th and 12th, may have either a less number of items in the agenda, or we can add an extra day, just to make sure that everybody will have a chance to discuss the items in the agenda.

We will have a council meeting on July 21, and another one the 11th and 12th of August, and, if nothing in between, our last one for 2021 will be in December of this year, and hopefully that meeting will be in person, but we have to follow the news and everything for the guidelines on COVID, and so we have the 7th and 8th in December, and the meeting will be in San Juan, hopefully in person. August 11th and 12th for the summer meeting, and then, as I mentioned, we will have a special meeting on July 21.

MARCOS HANKE: Thank you, Miguel. Thank you very much. I took note of all the dates, and I hope everybody did so. Thank you very much today to everybody that participated, the first day and the second day of the meeting, and thank you for your support today with my really bad internet connection, and that's why I didn't have my video on, because I couldn't hear anybody otherwise, and I will see you soon, and keep in contact with the council, and we are ready to adjourn, and the last words to Miguel.

MIGUEL ROLON: No last words, but I want to take this opportunity to thank Christina and Liajay. They have been heroes behind the whole thing, because, without them working together, we would not have been able to get through this meeting. We had a lot of audio problems with the Virgin Islands and Puerto Rico and everything, but they were able to cope with the whole thing, and so, for that, we want to acknowledge them, and we are very grateful for their work. Thank you, Mr. Chairman.

MARCOS HANKE: Thank you. I really share what you just said, and we are ready to adjourn the meeting. Thank you very much to everybody, and I will see you next time.

(Whereupon, the meeting adjourned on April 28, 2021.)

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