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PAGE 223: Motion that the Technical Advisory Panel (EBFM TAP) moves to present the council with the draft goals and sub-goals for the FEP developed at the June 2020 EBFM TAP meeting. The motion carried on page 223.

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**CARIBBEAN FISHERY MANAGEMENT COUNCIL
ECOSYSTEM-BASED FISHERY MANAGEMENT TECHNICAL ADVISORY PANEL
(EBFM TAP)
Webinar**

June 1-2, 2020

The Ecosystem-Based Fishery Management Technical Advisory Panel of the Caribbean Fishery Management Council convened via webinar on Monday morning, June 1, 2020, and was called to order by Chairman Bill Arnold.

CALL TO ORDER (0:00)

BILL ARNOLD: Today is June 1, 2020, and this is the Caribbean Fishery Management Council's Ecosystem-Based Fishery Management Technical Advisory Panel webinar, and it's a two-day meeting, from 9:00 to 5:00 each day, and we may extend, but I don't anticipate that today, and I think we've got a schedule that matches up pretty much with our timeline, and so I think we'll be in good shape, but, if anybody wants or needs more time, we'll see how it goes, but, otherwise, that's where we are.

The next thing I want to do, unless Graciela says I'm missing something, is I want to have a roll call first of the Technical Advisory Panel member and then everybody else who is online. I am the Chair, and this is Bill Arnold, and I will call out your name, and so hopefully not missing anybody, and so, first, Sennai.

SENNAI HABTES: Good morning, everyone. Sennai Habtes, and I'm a Research Assistant and Professor of Biological Oceanography at the University of the Virgin Islands. My specialties are fisheries oceanography and remote sensing use in fisheries-independent data collection and modeling.

BILL ARNOLD: Nice. Thanks, Sennai. I'm glad you're here. Orian.

ORIAN TZADIK: Hi, guys. Orian Tzadik, EBFM TAP and the Pew Charitable Trusts.

BILL ARNOLD: Stacey.

STACEY WILLIAMS: Good morning. Stacey Williams, Institute for Socio-Ecological Research.

BILL ARNOLD: J.J.

JUAN CRUZ-MOTTA: Good morning, all. J.J. Cruz, EBFM TAP member and University of Puerto Rico Mayaguez.

BILL ARNOLD: Tarsila.

TARSILA SEARA: Hello, everybody. This is Tarsila Seara, EBFM TAP member and University of New Haven.

BILL ARNOLD: Kevin.

KEVIN MCCARTHY: Good morning. Kevin McCarthy, EBFM TAP member and Southeast Fisheries Science Center in Miami.

BILL ARNOLD: Alida.

ALIDA ORTIZ: Good morning. Alida Ortiz, and I am from the Outreach and Education Advisory Panel. I'm glad to be here.

BILL ARNOLD: We're glad to have you, and so those are the eight Technical Advisory Panel members, and now I will call the names of everybody else that I have lined up here, so you can briefly introduce yourself. Liajay.

LIAJAY RIVERA: Buenos dias. This is Liajay Rivera, council staff and EBFM technical assistant.

BILL ARNOLD: Iris.

IRIS OLIVERAS: Good morning. This is Iris Oliveras, and I'm an administrative secretary for the council.

BILL ARNOLD: Nelson.

NELSON CRESPO: Good morning, everyone. This is Nelson Crespo, DAP Chair, Puerto Rico.

BILL ARNOLD: Graciela.

GRACIELA GARCIA-MOLINER: Buenos dias. Graciela Garcia-Moliner, council staff. Welcome, everyone.

BILL ARNOLD: Vanessa.

VANESSA RAMIREZ: Good morning. Vanessa Ramirez, council member and commercial fishermen from Puerto Rico.

BILL ARNOLD: Sarah.

SARAH STEPHENSON: Good morning. Sarah Stephenson, NOAA Fisheries.

BILL ARNOLD: Carlos.

CARLOS FARCHETTE: Good morning. Carlos Farchette, council member.

BILL ARNOLD: Maria.

MARIA LOPEZ: Buenos dias. Maria Lopez, Southeast Regional Office.

BILL ARNOLD: Tauna.

TAUNA RANKIN: Tauna Rankin here, NOAA Fisheries Office of Habitat and Conservation, and I also work for the Coral Reef Conservation Program.

BILL ARNOLD: Jocelyn.

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

BILL ARNOLD: David Dale. You're unmuted, David, but we're not hearing you.

GRACIELA GARCIA-MOLINER: David, you can send us a message in the chat if you can hear us.

BILL ARNOLD: He went from muted to unmuted, but I don't hear anything.

GRACIELA GARCIA-MOLINER: He is unmuted on our end, too.

BILL ARNOLD: He can hear us, but we just can't hear him. I will move on to Mandy.

MANDY KARNAUSKAS: Hi, everyone. Mandy Karnauskas, Southeast Fisheries Science Center, Miami.

BILL ARNOLD: Finally, Caller 02, and I don't know who that is, but you're leaving your mic unmuted.

KEVIN MCCARTHY: That might be me, Bill. I am muted on this

end.

BILL ARNOLD: Roger that. David, you could call in too, if you wish, if you're having trouble with your microphone on your computer.

GRACIELA GARCIA-MOLINER: We don't see anyone else on the line.

BILL ARNOLD: I don't. Not yet. I will probably, unless it's too disruptive -- If somebody else joins, I will probably ask them to introduce themselves. I'm sure people will -- In fact, we know people will be joining during the day, Richard for example, and I get that you guys have to come and go, and so don't worry about that. Do what you have to do, and hopefully, when we need you, you'll be here. Okay. The next topic on the agenda is --

GRACIELA GARCIA-MOLINER: Bill, we have one more housekeeping item.

BILL ARNOLD: Yes, sorry.

GRACIELA GARCIA-MOLINER: Because we do verbatim transcription and this is being recorded, please state your name for the record every time you speak, so that it's easier for Amanda, who does the transcription. Hold on a second. We have a problem. Hold on. Liajay, can you check the recording, because Iris is saying that it's on pause. Iris, hold on a second.

LIAJAY RIVERA: It is recording on my end, yes.

GRACIELA GARCIA-MOLINER: Sorry, Bill, but we need to record the meeting, and so something was happening with the recording, but it's ongoing, and so it's fine.

BILL ARNOLD: Not a problem. We do need to record it, and so, if there's any problem with the recording, we will call a halt until we can get it going again, and so just keep me informed.

GRACIELA GARCIA-MOLINER: The other thing is that we'll be keeping an eye on the chat, and so, if you see that you cannot communicate, send us a message, or send us an email or a text, and we will get you online, but the thing is that there is a slight delay in you sending your comments and us reading them, and so be aware of that. In the last case, you can always interrupt the chair if you need to say something, and he will put you in the queue to speak.

BILL ARNOLD: Absolutely. I like to keep these things kind of loose, and, of course, if you have questions or anything that you just want to put into the chat, to an individual or the group or whatever, then do that too, because we're watching it. Okay, Graciela?

GRACIELA GARCIA-MOLINER: Perfect. Thank you.

BILL ARNOLD: All right, and so now we are going to approve the agenda. Graciela, will you please bring up that Word version of the agenda, so we can go through it?

GRACIELA GARCIA-MOLINER: Liajay is the one driving today behind the scenes, and so she will bring up the agenda. There you go.

ADOPTION OF AGENDA

BILL ARNOLD: All right, and so just a few minor details. The first thing is the review of the minutes from the virtual meeting, that meeting took place on February 19, and so we'll make that correction. We had February 20 in the original agenda. Then I think we had some attributions of workplace that were not correct, and I know Jocelyn's and Tauna's, I think, and so we've made those corrections. Look them over and make sure they're right, but --

GRACIELA GARCIA-MOLINER: Hold on. You're mixing the minutes with the agenda, and so this is the agenda, your work agenda.

BILL ARNOLD: All right.

GRACIELA GARCIA-MOLINER: So are there any changes that you want to make? For example, Richard said that he would be logging in at 2:00 or 2:30, and so that's within that time slot of 1:30 to 3:00 p.m. Do you want us to make any changes in terms of bringing something up or changing it or the agenda is okay as it was published in the Federal Register?

BILL ARNOLD: I would just alert everybody that 10:15 to 11:30 a.m. may not be enough time to address Topics 1 and 2, and then, also, the really important Topic 3, Sub-Topic 3, Development of the FEP, the purpose and need and goals and objectives, because I would like to come out of this meeting, if possible, with a recommendation to the council regarding, or at least a foundation for them to start building, goals and objectives for this, much as they did when they developed the island-based fishery management plans, although these will be goals and objectives for each of the three islands fishery ecosystem kind

of sub-plans, because these --

I am not saying how this is going to go, but I am kind of envisioning that we will have a fishery ecosystem plan for the U.S. Caribbean region that will have, embedded within it, sub-plans for each of the three island groups, since they are three separate management sub-regions, but, again, that's up to the TAP and, of course, ultimately the council to determine how that goes.

That's kind of why we want to take this goals and objectives, and then the second thing farther down, the structure of the FEP, we want to take that to them and get them started, and so what I was thinking is we stick with this timeline, because, on the second day, we have a little more time flexibility, I think, and, if we need to come back to the goals and objectives, which I think we will, that would actually give everybody kind of overnight, and I know you will, to think about it.

Then we can come back and try to get hardly a perfect goals and objectives, but at least a starting point goals and objectives to turn over to the council, in the hope that they would kind of follow their previous procedure and let the DAPs look them over, and then they finalize them, because they're their goals and objectives and not ours. That's the only change that I would like to point out, Graciela, and I don't know if anybody else has anything that they want to bring up.

GRACIELA GARCIA-MOLINER: For the second day, we already have in the agenda included to continue the discussion from the previous day, and so I would suggest to leave the presentations from the different parties as they are, because they have already been advised that that's when they would be presenting.

BILL ARNOLD: Yes,

GRACIELA GARCIA-MOLINER: Then, if you don't have people presenting during the second part of the afternoon, you can continue with the discussion, and we can put -- From 3:15 to 5:00, there you can add a line to continue discussion on the goals and objectives, for example, or something like that.

BILL ARNOLD: Well, you can. Okay. That's fine.

GRACIELA GARCIA-MOLINER: All I'm saying is it's part of your agenda already.

BILL ARNOLD: I am thinking that we will probably be reasonably

close to our timeline on the first day, and that second day, the continue discussion, we want to get those down, because, like I said, in my opinion, there is two packages of recommendations that we make to the council, and that's the goals and objectives, to get them started, and the structure of the FEP, which is even going to be more sketchy, but at least that will get them to think about it, and then, in their meeting, they could be able to say, well, we think you should have a section on this, or ask questions about the sections we're proposing, et cetera, et cetera, so that we have a framework for the FEP and we can get started working on it. Again, any more comments on the agenda?

ORIAN TZADIK: I would like to say something, Bill.

BILL ARNOLD: Absolutely. Go ahead, Ori.

ORIAN TZADIK: Just that I second the idea behind the goals and objectives. I think it's an important component, and I think that maybe a light treatment this morning is a good idea that should be revisited later on in the meeting.

BILL ARNOLD: Okay. Excellent. I sent out, or maybe I didn't send them out, but we sent out the goals and objectives for the FMPs, just to give you an idea, because we're going to start completely from scratch, but you may look at those FMP goals and objectives and see things that you like or don't like that you think should be in the FEP or that absolutely shouldn't be in an FEP, but, really, all that was was a very shadowy start point, and, if the FEP goals and objectives are completely different, I would have no problem with that.

GRACIELA GARCIA-MOLINER: Everyone should have also received an email with a link to the G-drive file, and so, if you did not receive the island-based FMP goals and objectives, they are in the G-drive and available for you to view.

BILL ARNOLD: If you can't access the G-drive, please let us know, because it's important that you're able to do that. If you couldn't, we can send you these things, and there's always a workaround, but the G-drive definitely is convenient, if you have easy access. Okay. So, adoption of the agenda, I think we're ready to do that, and we would do that by motion or just by statement, Graciela? I think we do it by motion.

GRACIELA GARCIA-MOLINER: Whichever you prefer. You can do it by consensus, and, if there is no objection, then you have an approved agenda to work with.

BILL ARNOLD: Fair enough. I would ask if there are any objections to adopting the revised agenda. Okay. I will take that as consensus, and the agenda has been revised and adopted.

GRACIELA GARCIA-MOLINER: Bill, can we do a test? David Dale should be online, and can we ask him if his mic is working?

BILL ARNOLD: Absolutely. Are you out there, David? His mic is open, and I am not hearing him. David, maybe you would prefer to call in. I am with you, and I don't understand why something this straightforward should be a problem. Do you have your microphone fully functional on your computer?

GRACIELA GARCIA-MOLINER: The thing is that there might be a little sign that comes up and says, "use the new hardware now", but he is online.

BILL ARNOLD: He also chatted that he does not have access to the G-drive.

GRACIELA GARCIA-MOLINER: Okay. I will send him that.

REVIEW OF MINUTES FROM VIRTUAL MEETING - FEBRUARY 2020 (17:32)

BILL ARNOLD: Okay. While he is working through that, we will move forward to -- We had a meeting on February 19, as we previously mentioned, and we would like to review those minutes and make sure that everybody is up on them, and there are some changes, as I mistakenly got started on before, but there are some changes to those minutes as well.

I don't know if you had a chance to go through these, but there's the first change right there, and that is the agency and workplace attributions, and we had them a little mixed up. As Jocelyn pointed out, she is not with SERO, and she is with the Office of General Counsel, and so we made that correction. Then we corrected that Maria was with SERO, and I think, Tauna, we have you correct now, and that looks correct.

TAUNA RANKIN: Yes.

BILL ARNOLD: If anybody else has any concerns about --

GRACIELA GARCIA-MOLINER: Liajay will accept all the changes. Liajay, accept the changes, so that we can finalize this agenda, please.

MARIA LOPEZ: Bill, I just see that my name is as a planning team member, and I think we already got rid of that for everybody else.

BILL ARNOLD: Yes. We'll get rid of that.

MARIA LOPEZ: Okay. Thanks.

BILL ARNOLD: I'm glad you caught that, Maria. The planning team is historic, and it no longer exists. Okay. Then I see that Mike McLemore had a question, and Mike is the head of our General Counsel Office within the Southeast Regional Office building, and I had not seen this before.

JOCELYN D'AMBROSIO: I think Mike was just wondering what the Lenfest cycle of development was.

BILL ARNOLD: Okay, and so we're not going to go through that now. That's that circular thing with the arrow that says that you do this and then you do this and then you do this, and you develop conceptual models or whatever it is, and I don't know off the top of my head, but that's what was being referenced there, and I'm sure, at the meeting, we probably had a slide up showing it.

GRACIELA GARCIA-MOLINER: One thing that we can do is we can add the slide right there and just get rid of the comment.

BILL ARNOLD: Okay. I think it might take a little long to do that now, but if everybody is okay with that, I think that's a great idea. Okay. So we'll address that comment by adding an illustration of that Lenfest cycle, which we will talk about way too many times, I'm sure. Okay. Next.

There was one more comment down here, but I think that's the only one we have, but, if anybody has comments to the minutes, please let us know. There is one. You can delete that comment. That's mine. I was just commenting on that goal, but that was what was stated and discussed in the meeting, and so we should leave it.

GRACIELA GARCIA-MOLINER: Remember that many of these comments were prior to the pandemic issues.

BILL ARNOLD: Yes. Thank you, Liajay. This was kind of a lengthy addition. Who added this, do you know? Jocelyn? Okay. Jocelyn was just reminding us that there was another topic, and I think we should just accept this. That's all I saw.

All right, and so, unless anybody else has concerns or additions, then we will accept those minutes from the previous meeting, keeping in mind that we're going to add in the Lenfest cycle of development. I will do this by consensus. Unless there is any disagreement or objectives, we will accept these revised minutes from the February 19 meeting. All right. Thanks, everybody. We're doing great, and we're moving right ahead.

GRACIELA GARCIA-MOLINER: Yes, and so now we can finally change that to final.

BILL ARNOLD: Yes.

GRACIELA GARCIA-MOLINER: Perfect.

DEVELOPMENT OF THE CARIBBEAN FISHERY ECOSYSTEM PLAN INTRODUCTION/BACKGROUND (23:41)

BILL ARNOLD: I don't want to take a break now. I would rather move on to our 10:15 topic, which is Development of the Caribbean Fishery Ecosystem Plan. I don't hear any resistance to that, and so that's what we'll do, but we will still plan to take a break at 10:00.

All right, and so I will give a bit of an introduction and background to this. I guess that's just for everybody, and I would start that by saying -- Well, I will do the whole history, but this really came down, the concept of NOAA and the councils embracing an ecosystem-based fishery management approach, and our headquarters, and working with the councils, had a policy statement on this, saying we're going to do it to the greatest extent possible, and then they developed, we developed, roadmap implementation plans.

Those plans had about thirty-five topics in them, and some were short-term objectives, and some were medium-term objectives, and some were long-term objectives, and the advice from the chain of command was to focus on the short-term objectives. If you've got some medium-term objectives that are underway, then pursue those, and don't even worry right now about the long-term objectives.

The key to that was, and understandably so, these were all the councils around the nation, and there was some pushback on we can't do all these things, and these are unfunded mandates, to

use kind of a historic term on this, and so NOAA was sensitive to the council's concerns and said, well, let's kind of focus right now on things you're pretty much already doing, and so that was the kind of the case, and it depended upon the council, because, for example, there are at least three or four councils that already have fishery ecosystem plans in place, the Mid-Atlantic, the Western Pacific, I think the California -- I don't know them all, but Alaska, and I know those four already had them in place.

Others are just getting started, like us, and I think that, actually, the Gulf of Mexico Fishery Management Council may be a little bit behind us, although, in some ways, they are moving in parallel with us, and, in other ways, they're ahead of us, but maybe not, and so it kind of differs amongst the councils, but, for the Caribbean Council, like I said, we're just kind of getting started.

Our start point was developing a planning team, which was an informal group of people, and many of them are on this Technical Advisory Panel now, and others are in this meeting, and, in fact, just about everybody is in this meeting, but some of them weren't formally included in the eight-member TAP, but we got that planning team together, and then we got in touch with Lenfest, because the Lenfest group, working in tight cooperation with the National Marine Fisheries Service, developed this manual for preparing a fishery ecosystem plan.

There were twelve or sixteen high-level scientists on that, including Phil Levine and Tim Essington, and then Tim was super nice to come over to St. Petersburg and meet with us for a week and work through kind of getting this thing started, and, since then, we developed some -- We started with Tauna's leadership, and we were working on a risk assessment plan, and we did a variety of other foundational efforts, which I thought worked out very well, and then we decided -- Jocelyn guided us in formalizing the planning team into this Technical Advisory Panel.

That was done at the August, I think, council meeting, and, since then, it's been a bit of a hiatus, and it took a while, through the December council meeting, to get all the members of the TAP assigned and accepting of their role and to get things organized, and then we had that February 19 meeting, but this whole Corona virus thing has certainly just added to the complexity of getting spun-up, but I would say that now we're pretty much spun-up and ready to get moving forward and make progress on developing the FEP, in particular, and the concept

of ecosystem-based fishery management in the Caribbean region.

That's a very brief summary of the history of it, and so, if you have questions, please ask now. Otherwise, that's about as much of an introduction and background as I would propose, as I would present right now, but I would certainly welcome more input, and I also noticed there's a Caller 04 now, and that could be David, and I don't know, but, if not, please introduce yourself.

DAVID DALE: Hi, Bill. This is David Dale. I ended up calling in, and I'm not sure what's going on with my mic, but you are hearing me, and my name is David Dale, and I'm with the Southeast Regional Office's Habitat Conservation Division. I hope everybody can hear me now.

BILL ARNOLD: Yes, we can hear you, David, and thank you. I'm glad you're on. Just real quickly, any comments on my very rough introduction and background?

ALIDA ORTIZ: Bill, I have a question here. We are working, and I have been in the project for a little while, on the fishery ecosystem plan.

BILL ARNOLD: That's part of our job, Alida.

ALIDA ORTIZ: Okay, and this document is going to be integrated, or does it go parallel to the island-based fishery management plans? My question is, once this effort is finished, do we have to review the three island-based fishery management plans again?

BILL ARNOLD: No, and so this would be a guidance document, and it's going to take -- I want to point out right now that the council has assigned Graciela as the lead author on this, and certainly she can't do it all herself, but she is going to be the lead. They proposed, and correct me if I'm wrong, particularly you, Graciela, but that it would be like December of 2021 that it would be ready to go, and I don't know that we're going to be able to meet that deadline, but, once it's in place, then it will provide guidance on how to conduct an ecosystem-based approach.

That's, of course, where things get tricky, because how do you -- Jocelyn is going to talk about this later today, but how do you do -- We are guided by the Magnuson-Stevens Act, and it's largely a -- I mean, it's not completely, and there is enough flexibility for us to work, but it's -- You know, it's got a lot of single-species components to it that have to be met legally.

What the FEP might do -- It wouldn't rewrite the FMPs or anything like that, but it could lead to amendments to one or more of those fishery management plans. For example, the Puerto Rico component could say that we would advise this, and the council could take that up and say, okay, we're going to create a new amendment to the Puerto Rico fishery management plan, and we're going to implement that, and it goes through the whole process, and then the Puerto Rico fishery management plan would be modified accordingly.

That's one example, and that could have no effect on the St. Thomas/St. John or St. Croix plans, and, of course, vice versa on all of them. Any one of them could be independently amended, and that was kind of the point behind this, or they could take an approach where they're going to amend two of them or all three of them or whatever, and so that's -- This fishery ecosystem plan is going to be a guidance document, hopefully with not necessarily quantitative, but tangible actions that can be taken to achieve a more holistic, high-level approach to managing these key resources.

Kind of our guidance on this, or guiding mantra, is that you can't really manage the fish without managing the habitat upon which they depend, the coral reef ecosystem, and I use coral reef ecosystem in its broadest sense, because that connects to the seagrasses and mangroves and the reef-to-ridge concept and all of that, and it even -- You know, we've discussed this should be hierarchical, in the sense that you've got -- We have even talked, in Puerto Rico, of having sub-plans for the south coast or the west coast or whatever, and so you could work at that hierarchical level.

Then, of course, you can work at the island level, each independent island group, so to speak, but then the next level up is the U.S. Caribbean region, where you're talking about what we actually manage in Puerto Rico, St. Thomas/St. John, and St. Croix, and, out there, never spoken of, is Navassa Island off of Haiti, and that probably is better that we don't, but it's still there. It is still part of the management, to some degree, obligation.

Anyway, then the next level is the Caribbean Basin, because, as you well know, a lot of what goes on in this U.S. Caribbean region is influenced strongly by what's going on downstream, and they influence what's going on upstream, and vice versa. Spiny lobster larvae are an excellent example, and so you've got that hierarchical level.

Then, for some things, it's an even higher level of the hierarchy, and I would term it global, and Graciela gave me an excellent example this morning, and that's the sargassum forming maybe off of Brazil, or off the west coast of Africa or whatever, that is certainly outside, to some degree, the Caribbean Basin hierarchical level, and protein provision.

You know, if you take protein out of here, then, by reducing take -- You've got to replace that protein, because everybody still has to have their protein, and where are you going to get it, and how might that affect corn production, and this is getting pretty esoteric, but, still, how might that affect corn production in the Midwest, and that might influence the hypoxic zone in the Gulf of Mexico, and that affects tuna production, et cetera, et cetera, and so I wouldn't think we would go deep into that, and I think it's a little early to be going into that at all, but that's sort of the hierarchical approach, if this answers your question, Alida, but let me know if it doesn't.

ALIDA ORTIZ: Yes, it does answer my question. Thank you so much, Bill.

BILL ARNOLD: Thank you, Alida. That is sort of the background, and then -- Go ahead, J.J.

JUAN CRUZ-MOTTA: Bill, this is more, I would say, an academic question, or a very, very, very long-term question, but what is the likelihood, or what needs to happen, for the Act, and I am referring to the Magnuson-Stevens Act, to be changed?

BILL ARNOLD: J.J., that's an excellent question. You know, the Magnuson Act is revised roughly every ten years, and certainly not exactly, but it does get revised, and developing this approach and developing this plan could allow the council and the National Marine Fisheries Service to take some aspects of this up the chain, all the way to Congress, because Congress does the Magnuson-Stevens Act and not NOAA.

It's a congressional level, and it may provide advice and some justification for making modifications to the Act to better accommodate an ecosystem-based fishery management approach, and so that is not academic, but it is medium to long-term. Nevertheless, it is one of those potentials that our FEP, and the council's approach to ecosystem-based fishery management in general -- That's one implication that it could have, is that it's sort of a feedback loop.

Then Congress does this, and that allows us to do this, and then

we learn this and feed it back to Congress, and I think this is a good time to point out that this approach -- This is a long-term approach. I mean, it's going to take us years just to establish where we want to go with it, but, when we do, we should be thinking twenty to thirty years on these things for their lifespans, and, I mean, it can be modified, just like a fishery management plan can be amended.

A fishery ecosystem plan should be modified to take account of changing conditions as well, but think about the old fishery management plans, which are still the fishery management plans, I would point out, and like queen conch was 1985 or something, or 1987, somewhere back in there, and it's just now getting replaced, and so that's thirty-plus years.

These things last a long time, and so we want to try to make sure that we do them right, but always with an eye on that longevity. You can't just be thinking about what's going to happen in 2022. You need to be thinking about what's happening in 2032 and where you want to be and what you want your fisheries to look like and what you want your ecosystem to look like and what influence we could have at the fisheries level, but potentially, and we've discussed this a lot in the development of the conceptual models, even at a higher level.

If you're dealing with the ecosystem, now we have to start talking at a higher level with some of these other agencies about how water is managed on land and how solid waste is disposed of, et cetera, et cetera, all those many, many topics and things that the council can't influence, or at least strongly influence, but they could, potentially within this framework.

If we're all operating within a common currency, it may facilitate a more cooperative and team-oriented approach to making these decisions, because, for example, the EPA -- You ask them to do something, and it's like, well, why, but, if we can show them that, look, if you do this, then we can get this response, and it will benefit in this way, they would maybe be more amenable and say, okay, now we get it. We get the rationale, and we'll start working along those lines, or something like that. Did that help, J.J.?

JUAN CRUZ-MOTTA: Thank you, Bill.

GRACIELA GARCIA-MOLINER: Mr. Chair, if I may also add two other things for consideration, and one is the National SSC group, under the purview of the CCC, the Council Coordinating

Committee, is having a meeting, and it was supposed to be in August of this year, but it's postponed until 2021, on how to incorporate ecosystem indicators in the stock assessment process and how management of interacting species, in consideration of ecosystem-based fishery management, and all of these, including the assessment of species that are exhibiting distributional changes due to climate change impacting some fisheries. The National SSC will make recommendations to the CCC, who will then be looking at this in terms of the MSA.

In addition to that, there is a big effort by EPA to look at the biological criteria, and so they have come onboard, in terms of looking at the information that they have in relation to fisheries and the ecosystem, and so that effort is also underway, and so, as you said, all these regulatory agencies that we don't have -- The council doesn't have control over it, but they can be influenced in showing what impacts their actions have in terms of the ecosystem. We have all these other efforts that are ongoing alongside the council's developing of the FEP. Thank you.

BILL ARNOLD: Thank you, Graciela, and so the point is that there will be changes, and there always are, to Magnuson, and that's a very strong influencer, and not the only influencer, but a very strong influencer of how the Caribbean Council operates.

Also, in the opposite direction, we, and the council, and the council's SSC, can influence that process and the decisions that are made. When Richard goes to the National SSC meeting, he will be bringing with him things he has learned in this process, from the conceptual model development, but also from participation and learning from us and then from the council, et cetera, et cetera, and so we want to be influencers, but we also want to be, to the greatest degree possible, ready to adapt to changing guidance as it comes along.

Another key background point, as I earlier mentioned, when we had the planning team, the council funded us to keep a data person employed, and we had two of them in sequence, and they did a great job of identifying data sources and capturing those data sources and organizing them and then doing some preliminary analysis, and now that is sort of blending into and transitioning into, at least at the present time, something we'll talk about this afternoon.

J.J. and Tarsila and Stacey have Lenfest-funded work to move forward with data acquisition and analysis and interpretation,

and so we want to make sure that that and some of these other corollary activities that are going on that we will hear about this afternoon are all fully integrated and that we maintain a lot of communication, so that we're not duplicating effort, but we're integrating effort, and we're also not taking off into directions that have no link to one another.

To maximize our limited funds and their effective use, we want to make sure that we're working towards a common goal, and I think that's really important. As I always say, sort of the statement used to be that the Caribbean is very data limited, and, in some ways, the Caribbean is very data limited, but, in other ways, there is a lot of data, and it just needs to be brought together effectively, and we have the opportunity to do that, and I think that we'll find that there's a lot of enthusiasm for that effort.

You have got folks doing a lot of oceanography, and you've got the CARICOOS, but you've also got the Southeast Fisheries Science Center coming down on cruises, and they are doing current patterns and larval distribution, and then they've got the habitat mapping group, and we've got the visual census surveys, et cetera, et cetera, and there's been a lot more effort in the Caribbean, a lot more focus, and we have the opportunity to help bring all of that together, and I think it's a great opportunity that we're going to want to take advantage of, and, to some degree, we already are.

Some of it's early, and you need to build up data, and so like the visual census surveys, and correct me if I'm wrong on this, but we've got like two years of the modern method in Puerto Rico and three in St. Croix, or something like that, and, as we get more years, we will get more information.

Our best citizen scientists, the scientists that spend the most time on the water out there, are the fishers, and, if we could somehow convince them that their daily data, the incredible daily data that they collect, the spatial information, the temporal information on what they are catching and their effort and all that -- I understand why that's a difficult sell, but, if we could get that information and not even necessarily from every fisher, but that would be tremendous data, to look at how, potentially, fishing and the fisheries react to things like increased water flows out of the rivers or something like that, something that was touched on at the SSC meeting the week before.

There is a lot of information, and there's opportunities for

even more information, and, when you're doing ecosystem-based management, information is really important, perhaps the most important, part of being able to understand the ecosystem and what the best decisions are to manage that ecosystem.

What we want is a healthy coral reef ecosystem. If we've got a healthy coral reef ecosystem, we'll have healthy fishery resources, and I think the resources follow the health of the ecosystem, but, again, any comments are more than welcome.

If there's nothing more on that background and introduction, we can start in, before our 10:00 break, on the purpose and need and the goals and objectives. I think that, for that purpose, I would like to see any one of the three FMP goals and objectives that we have available to us brought up on the screen, so we can discuss starting there, and this may take a minute, and I understand if it does. Liajay or Graciela, if you think this is a good time to take a break, so you can get this up, if you need the time, then let me know.

GRACIELA GARCIA-MOLINER: I think that she has it.

PURPOSE AND NEED/GOALS AND OBJECTIVES (47:53)

BILL ARNOLD: Okay. Perfect. You can see, from this Puerto Rico version, the council developed an overarching goal, and this is what this fishery management plan is designed to do, in just the most general sense, and we would probably want to have an overarching goal for the fishery ecosystem plan as well, and I think that, Liajay, you should bring up a blank document, because we should dig in on this, and that's probably the first thing we should try to create and have a reasonably good start point on this, something we agree upon and would make as a recommendation to the council, although they are more than welcome to change it or vet it in any manner they wish.

We can get started with the overarching goal of the Puerto Rico fishery ecosystem plan, or, actually, I think we should start off with the overarching goal of this fishery ecosystem plan, because remember we're going to have a Caribbean-wide FEP that has sub-components within it, if you guys agree with that.

ORIAN TZADIK: Bill, I'm wondering if we can come to a consensus on what the goals and objectives -- Like what are we exactly talking about, because we have these goals and objectives that we're looking at for the fisheries managements plans that are very kind of -- They're very relevant to a regulatory document, right, and so is our overarching goal going to be something like

create a document that can advise the council in X, Y, and Z situations, or are we talking about an overarching goal of what we envision the FEP doing, in terms of let's say the overarching goal is to maintain a healthy ecosystem or something like that. I think we need to kind of clarify that, prior to actually diving into it.

BILL ARNOLD: Okay. That's good, Ori, and I would say that your first example, and this is just my opinion, but just to get us started on the conversation, and your first example would be more of that general overarching goal. This fishery ecosystem plan is designed to guide, and this is just a starting point, but guide the application of an ecosystem-based fishery management approach in the U.S. Caribbean region.

Then our second example would be the sub-goals, and it would be broken down into Goal 1 is to do this, et cetera, et cetera, and then your objectives would be the targets that you would like to achieve to meet those goals, and whereas the goals are going to be relatively stable, and not perfectly stable, and not set in stone, although the overarching goal may be, but the objectives could change constantly. As you achieve an objective, it goes off the list, and maybe new objectives pop up as you move through this thing.

It would be the overarching goal would be most stable, and the sub-goals would be somewhat stable, and the objectives would be constantly responding to changes, et cetera, would be kind of how I envision this, because the FEP is a living document, but, again, I need you all's input, and this is what the TAP members are for. This is not a single-member panel. Go ahead, Kevin, and then Ori.

KEVIN MCCARTHY: I've got a question. What has the council told you that they expect out of this advisory panel? I mean, have they given you some direction, or is it more a less-defined sort of mandate, which they expect us to come back with some recommendations for how this panel might operate? That's kind of how it sounds, but I'm wondering if they have provided you with any direction.

BILL ARNOLD: It's been a while, Kevin, but, no, I'm not really -- I don't have a good feel for them having provided us with any strong direction, and I think it's much more the second approach you mentioned, which is we should go into this next council meeting letting them know kind of where we are and that we would like them to give us that direction through their goals and objectives. That's when they should start getting a lot more

specific about what they have in mind, and, as you know, and understandably, they're not going to bring these up out of thin air.

We need to give them a start point, and then I think they'll build from there. That's what they did with these fishery management plan goals and objectives. They didn't just gin them up. We said, well, you know, here's what we're thinking, and now take these home and work through them with your constituents, et cetera, et cetera, and that's what they did, and they did a great job of coming back with their specific goals and objectives, and it was sort of an interactive, iterative process, but I thought it worked out pretty well.

It might take two meetings or so, and, obviously, we would be right to be worried that, wow, that's December of this year, and we need to be well along, but finalizing them is the very detailed, down-in-the-weeds kind of thing, but I think we'll have a pretty good idea, and be able to give them a pretty good idea, of where we're headed, so that they can re-direct us, to the extent they wish, at this upcoming meeting, which will be a webinar-based meeting and not an in-person meeting, although there is some talk, and, Graciela, let me know your thoughts, that this would be the spring meeting, and by, the end-of-summer meeting, there is some hope, at least, or whenever that meeting takes place, that it could be in-person, and, obviously, especially in the case of the council, I really think that the in-person meetings are far more effective, because you have all the opportunity to discuss and clarify and have side talks, et cetera, et cetera, that just help everybody to understand what's going on. Does that help, Kevin?

KEVIN MCCARTHY: It does, yes. I just didn't want us to head down a path that was not -- If we have some even broad direction from the council, I didn't want to head off in a direction that they were not comfortable with or was outside of the bounds of what they envision for this panel to be doing, but, if it's a much more open book, which it sounds like it is, then, yes, then I agree that come forward with some proposals of how the kinds of things that this advisory panel might be doing for them under their direction, and that makes sense to me of the kinds of things that this advisory panel might be doing for them under their direction, and that makes sense to me.

BILL ARNOLD: Okay, and so two things. One is, if anybody does object to my view of this, please let us know, and the second thing is that Carlos is on the call, and he is a council member, and Vanessa too, and, if they have any comments on this, or if

they wish to correct my perspective, I would like for them to do so. Otherwise, we'll hear from Ori.

JUAN CRUZ-MOTTA: That was J.J., for the record.

BILL ARNOLD: I'm sorry. Carlos and Vanessa, are there any other council members on? I don't think so, or anybody else, of course, and let me know your thoughts. J.J., that would include you or anybody else.

ALIDA ORTIZ: Nelson Crespo is also on the council.

GRACIELA GARCIA-MOLINER: Mr. Chair, if I may, some of what the council has looked at, and it's going down this path, is the NOAA National Marine Fisheries Service policy statement, and so supporting the implementation of the EBFM to better inform and enable better decisions regarding tradeoffs among and between fisheries, commercial, recreational, and subsistence, aquaculture, protected species, biodiversity, and habitats.

Recognizing the interconnectedness of these ecosystem components will help maintain resilient and productive ecosystems, including the human community on which they depend, even as they respond to climate, habitat, ecological, and other environmental changes.

Going back to the generality of the direction, it's what the council has been looking at, and they had provided the DAPs and the SSC with the homework of building their conceptual models, to see how stakeholders understand the functioning of their ecosystem, and, so, for the TAP to actually convert this into the first draft of the overarching statement and the goals and objectives to present to the council members, so that then they can evaluate them and provide you with guidance on what to do next.

BILL ARNOLD: Thanks, Graciela. Anybody else? J.J.

JUAN CRUZ-MOTTA: I am fine. Thank you, Bill.

BILL ARNOLD: Okay. All right.

MARIA LOPEZ: I just wanted to comment. If you look at the goals like in each one of the individual plans, there are many of the goals that are stated in there that have an EBFM focus, and so, if the ultimate goal of this document is to provide advice and guidance to the council as to how to manage fisheries within that coral reef ecosystem context, and it will help them

to prioritize the issues and the management goals, I think maybe one way to do this is to look at what are the goals and the objectives that are EBFM oriented and see how they can be tied into the goals that the FEP will have, so that you can provide management advice that they can actually use and put into place. That's my comment.

BILL ARNOLD: That's a good point, Maria. It's very important that the fishery ecosystem plan, and the goals and objectives of that plan, be aligned with the fishery management plans, which are where we work. That's where the regulatory capabilities lie, and so they don't have to replicate, but they should be aligned with it, and, to the extent that one of these goals, or one of these objectives, is appropriate for inclusion in the FEP, I think it should be, and so we're about to take a break, and I would ask, Maria, if you're willing to go through these things real quickly and just highlight the ones you think are FEP -- Or everybody can do this.

Keep in mind what you think in all three of them, or you might just want to take one island, however you feel, but highlight what you think would be appropriate for inclusion in the FEP goals and objectives, and I just want to stress, again, that's why I want to get these goals and objectives started on by the council and get them an idea of how we intend to structure this FEP, and I want to do this at the upcoming council meeting, because I want to make sure that we are fully aligned with the council's thinking before we go any farther, and, to the extent that we're not, that they can correct us and reorient us, so that we don't go down, as Kevin pointed out, a path that is not appropriate and the council just comes back and says, sorry, but -- At the late summer meeting, or the December meeting or something, they say, no, you guys are going to have to go backwards quite a ways, because we don't like where you're headed. That's what we don't want.

STACEY WILLIAMS: Bill, can I mention something?

BILL ARNOLD: Absolutely.

STACEY WILLIAMS: I totally agree with Maria, after reading the goals and objectives of these different island plans, and, from like the Lenfest project, should we maybe like focus on the goals, because I could see that's how the objectives would be developed, after we finish with our analyses for the Lenfest project and how I think a lot of things -- Maybe not a lot of things will change, but it could be modified, what we have, and I know that it's three years down the line, but could that be

possible? I don't know.

BILL ARNOLD: Stacey, that's a good point, and that's why I said earlier that the objectives will be the most flexible of these. We don't want to wait until the Lenfest project is over to establish our objectives, but, as the Lenfest project moves through, and the other stuff, the ecosystem status report and the risk assessment and other analyses -- I mean, there's going to be a lot of activities, and, if we can pursue more involvement and more funding, we will.

They may change, and so I think that we should approach this like first we need to establish what the overarching goal is, and that overarching goal may be a single goal for the U.S. Caribbean region, regarding the FEP, and then, within each of the management areas, you could have these individual sub-goals, and, again, this is our decision to make, and not mine, and I'm just trying to plant seeds, so you guys will think about this, and kind of work at it like that.

Maybe we just go to the council meeting, and, again, I'm looking for your input, with our concept of what that overarching goal is and what our concept of some of the sub-goals might be for each of the island groups, or just sub-goals overall, whatever you think, and so I would suggest that we go ahead and take our 10:00 break and be back at 10:20. Then, when we get back at 10:20, let's focus on this, all the way up until lunch, if that's okay with you guys.

GRACIELA GARCIA-MOLINER: Bill, you have a comment from Carlos. It reads: I agree with Maria's comments. The council needs to use the FEP as guidance to incorporate ecosystem concerns in each of the island-based plans.

BILL ARNOLD: Okay.

GRACIELA GARCIA-MOLINER: So see you at 10:20?

BILL ARNOLD: We'll be back at 10:20.

(Whereupon, a brief recess was taken.)

BILL ARNOLD: Okay. We're back from our morning break, and we're going to get back into our discussion of the FEP goals and objectives and developing a tentative list that we can present as a recommendation to the council at their upcoming meeting. Just quickly, Graciela, when will that meeting be held? I have forgotten.

GRACIELA GARCIA-MOLINER: The 23rd and 24th.

BILL ARNOLD: Of June?

GRACIELA GARCIA-MOLINER: Yes, June.

BILL ARNOLD: Okay. Do you have any feel for what the remaining of the year schedule is?

GRACIELA GARCIA-MOLINER: Around August 11 or 12, if I'm not mistaken, and I don't think that the council is planning on having an in-person August meeting, and so that would be the 11th and 12th, which was already scheduled, and then December.

BILL ARNOLD: And December they're keeping open, as far as face-to-face?

GRACIELA GARCIA-MOLINER: Right.

BILL ARNOLD: Okay. Where would that be, if we actually had a face-to-face meeting?

GRACIELA GARCIA-MOLINER: Well, the original idea was to have it in St. Thomas. We haven't been back to St. Thomas since 2017.

BILL ARNOLD: Wow.

GRACIELA GARCIA-MOLINER: Those would be the face-to-face -- I mean, if everything goes as planned, but, as far as August is concerned, the way I have it in my schedule, it's that it was originally scheduled for St. Croix, but most likely it will be a virtual meeting.

BILL ARNOLD: Okay, and so the key there is --

GRACIELA GARCIA-MOLINER: This is something that we'll be discussing at the June meeting.

BILL ARNOLD: Okay, but, if they stick with that schedule, the turnaround is going to be quick between the June meeting and the August meeting. That's not even two months.

GRACIELA GARCIA-MOLINER: Correct.

BILL ARNOLD: So we'll want to have a TAP meeting at least, at a minimum, between those two, and I don't know what the SSC or the DAPs would do, but, obviously, in a lot of ways, we interact

pretty closely with them.

GRACIELA GARCIA-MOLINER: We have a meeting on June 3 to determine the next date of the SSC meeting and how long it will take, and so we won't be able to update you at this meeting, but we'll let you know when the SSC meets again.

BILL ARNOLD: Okay. A key objective of that meeting would be to continue their work on their conceptual models.

GRACIELA GARCIA-MOLINER: Finalize it, yes.

BILL ARNOLD: Okay. Well, I don't want to get too crazy, but yes.

GRACIELA GARCIA-MOLINER: I keep hoping.

BILL ARNOLD: They seem close. Okay, and so that's good information. Anything on the DAPs? Do you have any feel for their schedule?

GRACIELA GARCIA-MOLINER: The DAPs have meetings on the 8th, the 9th, and the 10th, and so, if I'm not mistaken, St. Thomas, St. Croix, and Puerto Rico, in that order, but they are mostly going to be talking about the spiny lobster SEDAR projections and the situation with the pandemic, because it definitely has taken a toll on the fishing industry and associated businesses, and so that is their main focus this time.

However, as I think I said already, and I might have told you about this, but there are some questions that we have, because the St. Thomas DAP still needs to do their regulatory meeting, and so that has been postponed, and I don't know when that's going to take place, and that was their main -- That was -- The top component of their conceptual model has to do with the regulatory agencies, and then we have some questions for the DAPs that we might be able to do not face-to-face and just have a virtual meeting with them and have some questions that we need to address, but they are pretty much -- Puerto Rico and St. Croix are pretty much done, and this would be really fine-tuning things.

BILL ARNOLD: So will these DAP meetings be accessible in general on the webinars, or is that --

GRACIELA GARCIA-MOLINER: Yes. Let's take a note that we haven't sent the TAP the meetings for the DAPs, and so we'll send you the invite for the Go to Meeting.

BILL ARNOLD: Excellent. Thank you, Graciela. Okay. Let's keep moving with these goals and objectives, and I think that, if Maria is ready, Maria Lopez may have some information and guidance that might help us on this, and is that correct, Maria?

MARIA LOPEZ: This afternoon, I am going to give you the progress to date for the island-based FMPs, but I have also put together a couple of slides basically talking about the same thing that we're discussing right now, and so why not just show them right now, and maybe that will help us guide this discussion for the goals and objectives, and so I think I already sent it to you, Graciela and Liajay, if you want to present it.

I am not going to do this as an actual presentation, but I just want you guys to see things that come from the actual FMPs, and also from other guidance documents that we have been using through this process, for example the Lenfest 2016 guidance and the paper by Phil Levine and also the roadmap, the implementation plan, for the Caribbean and other documents, and so the overarching goal for each of the island-based FMPs is the same for the three FMPs, which is to ensure the continued health of the fishery resources occurring in the EEZ within the context of the unique biological, ecological, economic, and cultural characteristics of those resources and the communities that are dependent upon them.

Every FMP has the same goal, and then, to achieve the goal, each one of the FMPs establishes that place-based framework within each plan, which is designed to provide the foundation for conserving and managing the island's fishery within an integrative ecosystem-based approach, and this is from the FMPs.

Now, as you saw earlier, each FMP will have specific goals and objectives, and many of them will have an explicit EBFM focus, and that's what I was mentioning earlier, that we should look at those and see how we can align the goals and objectives for the FEP with those.

Now, many of the goals and the objectives are being addressed throughout each FMP, and some may be addressed through future amendments to the respective plans, and this is where the information that will come from the FEP comes in very handy, because the intention would be then that the FEP, as the guiding document, would provide the context to do those future amendments as needed. It will provide that information, and it would identify the things that can be done.

You know that the EBFM is not really completely new in the previous FMPs, and we have been doing EBFM, even if it's not formally, through the NMFS policy, because the FMPs do include the consideration of ecosystem components at various levels, because we have been analyzing the effects of the biological and physical and socioeconomic environments, and even the administrative environments, on the actions that we have been doing.

For example, the FMPs also include ecosystem considerations, for example when the ACLs were established for parrotfish and other herbivores to account for contributions to the coral reef ecosystem. What is new is the FEPs, and the NMFS policy basically formalizes the EBFM process, through these -- It started with the FEPs.

One of the most important things about this whole process with the island-based FMPs and the FEPs is that the island-based FMPs will provide an opportunity to implement the EBFM, and it will allow for developing and relying on better data, better science, and more effective use of local knowledge, and that is something that is actually in our management plans and that has been expressed by the stakeholders.

I had already put together some of the goals and objectives that came from the actual FMPs that had an EBFM focus, and, Bill, this is what you were asking to do earlier, and these are not all of them, but maybe we can start the conversation here.

BILL ARNOLD: Absolutely.

MARIA LOPEZ: Some of them are shared among the different plans, and some of them, as you can see, are going to be a goal for one plan, but it's set as an objective in the other, and so I don't know if you want to go ahead and discuss this, or I can go to two more slides that I have that have some points about maybe what else we can be looking for, and then maybe we can go back to the goals and objectives with kind of like a more fresh perspective.

BILL ARNOLD: I want you to finish this, and then I want to go back to Slide 2, Maria.

MARIA LOPEZ: Okay. Go to the next one, please. These are the expected benefits from the implementation of EBFM in the U.S. Caribbean region. Number one is to improve management of fisheries and associated living marine resources, while best

anticipating climate change impacts to the ecosystem and taking full advantage of the available information to identify and monitor linkages among living marine resources.

Also, improve alignment of data collection across line offices, and this is super important. Improve stock assessments, better reflecting data limitations and opportunities. A greater engagement of stakeholders, local partners, NOAA line offices, and agencies. Improved coral reef and fishing community resiliency, and ensure that community responses to fishing impacts are better understood and more effectively managed, and so these are things that have been identified in the implementation roadmap of the EBFM for the Caribbean in two other exercises and things that have been done since this EBFM has been starting to be more formal.

BILL ARNOLD: Maria, that's a really nice slide. Very well done.

MARIA LOPEZ: Thanks, Bill. We can go back to that, and maybe those can be part of the goals or objectives that we have for this process. This is my last slide, and I wanted to point out that the FMP is a regulatory mechanism, and the FEP is non-regulatory, and what we want to do is use the FEP in concert with the FMPs to achieve EBFM. That will allow us to bring all of these ecosystem considerations into the process.

The idea is the Caribbean FEP guides the EBFM procedures and the processes, and so the FEP could address issues that are not specifically captured in the FMPs that can -- I have faith that they will be identified through all of the processes that are being done in the development of the EBFM.

The goals in the FMP will translate EBFM into action, and that will be by providing guidance to the FMP strategies and approaches, and the way we see it is that the FEP will help the council to prioritize the issues and the goals and select what to address and when to address it, for example by identifying and addressing the tradeoffs and also looking at alternative management decisions. For example, what is important and what is urgent and what is not important and what is not urgent, et cetera?

Very important in here is that it will continue and make a lot of emphasis on including the stakeholders in the fisheries management process, and it is expected that they will be participating in the proposal of alternative policies and their evaluation.

Now, lastly, and I mentioned this earlier, the FEP should be focused on the management action and taking management action, versus being a description of the ecosystem. You know, we have -- We are going to have some obligations, but we need to make sure that they would be incorporated into management strategies.

The FEP should identify management strategies that are adaptive and that are able to respond to changes, and so this is -- You mentioned, Bill, earlier that this should be a live document, and it should also include measures to monitor and evaluate the management strategies that are going to be put into place, so that, if change is needed, the policies can be improved. All of this information, as I mentioned earlier, comes from various different sources that we have been actually using for preparing the FEP.

This is all that I have with respect to this, and I think the last slide can be presented later, because this is just where we are in the island-based process, or, if you guys want me to say that right now, Bill.

BILL ARNOLD: No, you can talk about that this afternoon, Maria. You will have plenty of time then.

MARIA LOPEZ: Okay.

BILL ARNOLD: So just a comment here. The FMP is regulatory, and the FEP is non-regulatory, and that's the approach that we're taking. Out in Hawaii, in the Western Pacific, they actually transitioned their FMPs into fishery ecosystem plans, but they are essentially fishery management plans. They don't have FMPs and FEPs. Now, they only have FEPs, and that's just a comparison, and that's no big deal. Okay. Any questions or comments, folks?

JUAN CRUZ-MOTTA: If you ask me what is a goal, it's something that we want to achieve, right? In that context, why the goals of the FMP and the FEP should be different? What we want to achieve is always the same, right, like healthy fisheries systems, and I don't know.

Like from something else that Maria mentioned, and it includes coral reef resiliency, right, and those are things that we want to achieve regardless of how we want to achieve those, and so, if you ask me, what we want to achieve hasn't changed. Why we are here, I think, is to discuss how we want to achieve that and to talk about what looks like the objectives.

BILL ARNOLD: Maria, will you please go to your Slide 2? Look at the first bullet. The first bullet is the overarching goal, and I would word this, for the FEP, the general overarching goal, that the overarching goal of the FEP is to ensure the continued health, not of the fishery resources, but of the coral reef ecosystem, however you want to term that, and so that's already a change in a goal, because, while you could argue, and rightfully so, J.J., that it is also to ensure the continued health of the fishery resources, the ecosystem approach does want to achieve that goal, but it goes beyond that, because it is taking the -- It's making the argument that you have to actually operate at a higher level, or a broader level, than just the fishery resources, in order to maintain the health of that coral reef ecosystem, which then should contribute to the health of the fishery resources. Does that help to address your question, J.J.?

JUAN CRUZ-MOTTA: Sure, but what I mean is some of the goals need to be updated, if you want. What I am trying to say is what is going to fundamentally change on what we do in this group are the objectives, rather than the --

BILL ARNOLD: Yes, and that's okay. What we want our ecosystem-based fishery management approach to do is to help us more effectively achieve the goals and objectives of the fishery management plans, because that's ultimately what it boils down to, but, as we discussed earlier, there is this separate aspect to it, and that is providing guidance and an integrated pathway for other agencies and other activities, and so those aren't encompassed in a fishery management plan, but they could be very important to the successful achievement of the fishery management plan's goals and objectives.

ORIAN TZADIK: This is in relation to what I brought up right at the beginning with regard to all of this, and I agree with what you just said, in that these goals -- What the FEP can do to then further the goal of the FMP, and so we're creating -- The goals and objectives of this document are going to be to help inform towards better decision-making kind of thing, and that's at least how I see it, and am I understanding you correctly?

BILL ARNOLD: Yes. that may not be the exclusive goal, but it is a key goal, and, again, that's what this group needs to decide on, and that's why I think it's so important to get this overarching goal settled to everybody's satisfaction, I mean to go ahead and do it now.

ALIDA ORTIZ: Bill, I have a comment. I absolutely agreed with Orian before and now, and I am seeing these two documents and these two scenarios -- Like the FEP is a more qualitative approach, a wider look at where the fishing occurs, and then the ecosystem-based fishery management plan is taking that knowledge from the fishery ecosystem and applying it for a sustainable fishery, to maintain the health of the coral reef specifically, and so they are talking about the same area, about the same issues, the same content, but from two different points of view, but they are very complementary to each other, and I think that's something that we have to keep in focus here. That's my comment.

BILL ARNOLD: I would have one comment on that, and that is the use of the word "qualitative", because, while I agree with that, Alida, and I don't know if this is what we want to do, but do we want to include an analytical component, or some analytical appendix or whatever it may be, or analytical link, that can be used by the council to make decisions based upon predictions, because, ultimately, we want our conceptual models to become quantitative models, and quantitative models, to the extent that they we have faith in them, can be used to make predictions of what alternative decisions may entail.

Those aren't things that would be included in a fishery management, and the fishery management plan could describe what the decision is and how they got to that decision, but it may be drawing from the FEP information, the quantitative information, to support that decision, and, again, I'm sort of asking if you guys are in agreement with that and does that seem reasonable.

ALIDA ORTIZ: I myself, I am agreeable. I agree with what you're saying, but the only thing is that I see it as a wider look from the fishery ecosystem plan.

BILL ARNOLD: Sure, and the discussion of whether and how "quantitative" would be included is probably better held for when we actually talk about the FEP components, mostly tomorrow, or we will talk about it tomorrow, and we'll talk about it a lot, and that's when we can be discussing what do we include and what do we maybe not include, but that discussion is going to be helped along a lot by us understanding at least basically what the goals -- Even if we haven't established our objectives, what the goals of this FEP and its sub-FEPs are. I mean, that's really important, because that's going to help influence what we consider to be a necessary component of the fishery ecosystem plan.

I am not hearing any comments on that, which is fine, and so I would suggest, if you agree, that we take that first bullet out and paste it to a Word page and talk about what our overarching goal for the FEP should be and get it as settled as we can, at least something we can take to the council as our recommendation.

GRACIELA GARCIA-MOLINER: Bill, we are going to have one document open, and you can divide that document that Liajay is going to open in Word as you see fit, but it's so much easier just to deal with one document.

BILL ARNOLD: Yes, and the first thing on the document will be an overarching goal, so that it will apply to everything that comes out.

GRACIELA GARCIA-MOLINER: Exactly.

BILL ARNOLD: Yes.

JOCELYN D'AMBROSIO: Bill, the one thing that I would recommend that we do on this document, just because we're providing proposals for the council's consideration, is just to make that clear, so that, even though we're brainstorming what the goals and objectives would be, these are recommendations for the council, and then the council will take these recommendations and either disagree or agree or offer modifications, but just to clarify that it's the council that sets these goals, and so if we could write maybe "Draft Recommendations", something like that, just to clarify, so that we have that in mind. I do think it's very useful to be able to provide that insight to the council, but, again, just to make it clear that it's the council's decision.

BILL ARNOLD: Yes, I agree.

JUAN CRUZ-MOTTA: Bill, that first overarching goal would be rephrased, following what you suggested before, right?

BILL ARNOLD: I would start out by saying the overarching goal of the FEP in the actual bullet.

GRACIELA GARCIA-MOLINER: Just change "EBFM" to "FEP" and take out "each".

JUAN CRUZ-MOTTA: You also mentioned something about not only the fishery resource, but also the resiliency of the coral reef or the health of the coral reef or something like that, or the

health of the habitat.

BILL ARNOLD: Okay, and so the overarching goal of the FEP -- We can wordsmith this later, is to ensure that -- Do we want to say that it is to ensure the continued health of the coral reef ecosystem or what?

STACEY WILLIAMS: Bill, can we put something like "marine ecosystems", or "marine habitats", and not just focus on coral reef?

BILL ARNOLD: Absolutely. I have trouble with that, and that's why I asked if that's really how we want to phrase this.

ORIAN TZADIK: I would suggest putting in a phrase, before the words "to ensure", and so something about that the overarching goal of the FEP, because, after the words "to ensure", this is mostly the IBFMP's goal, and so I would say that the overarching goal of the FEP, and I'm just brainstorming, and I don't have this like with the correct wording, but something about promoting ecosystem-based strategies to ensure. Do you see what I'm saying, so that we're incorporating -- The goal of the FEP is to bring these ecosystem considerations to the table, in order to ensure, et cetera.

BILL ARNOLD: So delete "ensure" earlier in that sentence and say, "is to promote". Go ahead, Ori.

ORIAN TZADIK: Again, I'm working this through as I'm saying it.

BILL ARNOLD: Absolutely.

ORIAN TZADIK: So is to promote ecosystem-based strategies to ensure --

BILL ARNOLD: Would you like to say "approaches" instead of "strategies"?

ORIAN TZADIK: I would, yes. Approaches to ensure. Yes.

BILL ARNOLD: Okay. I don't know about "continued health", and we could just say "health", and I don't even like "health", really, but what do you guys think? Any comments there?

ORIAN TZADIK: I agree, and I don't like "health" either, and, if you think about EBFM, I think a real strong tenet of EBFM has to do with resiliency, and I don't know if we want to get into that with the overarching goal, but I do think that "health"

might be the wrong word.

BILL ARNOLD: Well, let's start with "resilience". That's like we're going to maintain the stable state, and I don't think we want to maintain the stable state.

ALIDA ORTIZ: What about "sustainable condition" or "sustainability"?

BILL ARNOLD: Okay. Get rid of "continued" and say -- I am just throwing this out, but to ensure the resilience and sustainability of the --

SENNAI HABTES: I think, generally, when we talk about ecosystems-based management, we use three terms for the condition of the ecosystem, and it's usually healthy, productive, and resilient.

BILL ARNOLD: Okay, and so say to ensure the -- Go ahead.

SENNAI HABTES: If you don't want to use "health", I would say to ensure a resilient and productive ecosystem, or resilient, productive, and sustainable marine ecosystem.

BILL ARNOLD: All right, and so say resilient and productive here.

KEVIN MCCARTHY: I would say that, if health is a term that used in the field, let's not make up our own jargon. Let's stick with the commonly-accepted terminology, because we don't need to just -- If it's standard usage, then let's stick with that, rather than blazing new ground here, at least on a first cut.

BILL ARNOLD: Okay, and so how about --

KEVIN MCCARTHY: Let's stick with what is typically used.

BILL ARNOLD: How about to ensure a healthy, resilient, and productive -- How does that look? What do you think about that?

KEVIN MCCARTHY: Mandy has got a --

BILL ARNOLD: I'm going to deal with that, Kevin. Let me --

KEVIN MCCARTHY: Okay.

BILL ARNOLD: Liajay, can you see Mandy's comment? If you can, would you do me a favor and copy the part in quotes as a

separate bullet point right under this, please, if you can do that? What she just copied into there is from the Gulf of Mexico's technical advisory panel, and so I'm not saying we have to use that, but we could pull some of that, and we may want to, if you guys agree.

ORIAN TZADIK: That looks like a much more concise version of what we have above.

GRACIELA GARCIA-MOLINER: But that's different. Read them separately. I mean, you can state two overarching goals, because it's very different from what you have at the top. This is what you are providing, but what you want to achieve is what you have in Goal Number 1, and you are providing the framework through this FEP to integrate that.

MANDY KARNAUSKAS: Just to clarify too, I just put that up there as some food for thought, and that was our mission statement and not our goals and objectives. We had a separate goals and objectives, and so I just wanted to provide some food for thought to the conversation.

BILL ARNOLD: Mandy, this is helpful, and what I would say is we look at that and see if there's anything in there that might guide Bullet 1, which is going to be our overarching goal. This isn't going to replace it, but it could influence it.

TARSILA SEARA: I was just going to say that I think long-term ecological and socioeconomic sustainability might be close to what we're trying to say there, and then perhaps, instead of -- Of course, instead of Gulf of Mexico, then we could add the marine ecosystems to that.

BILL ARNOLD: As far as I'm concerned, Bullet 1 is only good through "productive". It's to ensure a healthy, resilient, and productive -- I mean, we could say marine ecosystem, and I don't have a problem with that, but there's still a lot more work to be done on this.

KEVIN MCCARTHY: Bill, I see these as two very different statements. I see the first one as telling you about the FEP, and the one below that Mandy provided is more along the lines of what this advisory panel might do. One is what the FEP does, and the other one is more along the lines of what an advisory panel might do for the council. That's where I think we're waffling a little bit on the goals or duties or responsibilities of the panel versus what the FEP does, and those are different things.

BILL ARNOLD: Okay, and so what I'm thinking here is that Bullet 2 we should keep, but it may be an objective or a sub-goal, and I think we should just push it down a little and just hold onto it for now, if you guys agree with that. I think it could be useful for us, but I'm not sure that it goes into the overarching goal.

KEVIN MCCARTHY: I guess my question is are we trying to define what the FEP is, or are we trying to define what we think the duties and responsibilities of this committee are, and those aren't the same thing.

BILL ARNOLD: No. We're trying right now to --

KEVIN MCCARTHY: So which are we --

BILL ARNOLD: We are trying to define the goal of this fishery ecosystem plan, why are we creating a fishery ecosystem plan. That is all we're working on right now, just --

KEVIN MCCARTHY: I guess I would say we've got the cart before the horse then. If the council hasn't told us, in a very specific way, what it wants this committee to do, then shouldn't we determine -- Shouldn't we make some recommendations of what utility, what recommendations, to the council of the utility of this advisory panel, since we don't have the defined goals and responsibilities?

One of those things might be to advise them on how an FEP might be useful and provide them with some better ways to manage the fishery resources, which is their responsibility, but so I think that determining what our roles and responsibilities are might -- In my way of thinking, that's the first step.

Then, if one of our goals, or responsibilities, is to advise them on what FEPs are, terrific. Then let's define that, but, right now, we have jumped ahead of ourselves, it seems to me, to already making those kinds of recommendations to the council when we haven't really defined for ourselves, or at least I am not catching it -- We haven't defined for ourselves what our role is, and our role may well be to do this, but I am just saying let's define our role first, because it may be more than just this. I suspect it is.

BILL ARNOLD: Kevin, I don't fully agree with you, and there's two reasons why. The first one is we have been presenting to the council, as we go along, our progress with this EBFM/FEP

development, and they have been supportive of that, and that has included what we're trying to get done and where we kind of intend to head with this, but that was as a planning team, and it was a little less formal, and so now we're trying to formalize it, and so that's one thing.

The second thing is it's going to take -- The council is going to have to mull this over and provide inputs, and it's going to take them a while, and so, while I agree with you that the objectives are really important, I think, to take off on what you're saying, the objectives are going to be basically the council's objectives as to what, really, they expect their TAP and their DAPs and their SSC, these teams, to accomplish to help them achieve the overarching goal and the individual goals within each island group.

We're not to tell them any of this, but we're just going to give them some ideas, that these are our recommendations of what we think an overarching goal should look like, what these sub-goals should look like, and what objectives need to be achieved to make those goals come to fruition, and that would be my look at it, and so we're not going to stop with this overarching goal, but I think it's very important that we establish it, and I do think that, for the TAP and the people on this call themselves, understanding what that overarching goal is will influence sub-goals and objectives, and so I think that it is important to get this draft down, keeping in mind it's just a draft, because the council is the one that's going to say this is what this overarching goal looks like.

I know, and you know as well as I do, from experience, that the council likes some guidance. They like a start point. They like a seed, and they don't work well with a blank sheet of paper, but, if we can give them something to work off of, they will do a very good job of working off of it, and so that would be my look at it, but I'm interested in you all's comments as well.

KEVIN MCCARTHY: Bill, I don't want to go back and forth on this a whole lot, but I don't disagree with you, and I don't think what I am suggesting precludes doing this. I am just of the opinion that making some recommendations to the council as to what this -- Because we don't have any yet, but what this advisory panel -- How it would fit in to advise them and what sort of our goals and responsibilities might be depends on whether or not they agree with those recommendations, while at the same time moving ahead with what you've got on the screen.

I just feel like understanding what we think we're meant to be doing would be helpful, and it doesn't preclude doing this, because I think advising the council and making recommendations to them on how the FEP -- What it is and how it might be used, I don't see those as mutually exclusive, and I guess I'm probably not explaining myself very well, but I feel like we're charging into the process before we have really determined how we might suggest to the council that we fit into the process, and that's all I'm saying.

BILL ARNOLD: I think those are good points, Kevin. Go ahead, Graciela.

GRACIELA GARCIA-MOLINER: Let me explain what the council did at the December meeting. Once you have the completed TAP membership, you were tasked to have a meeting and start working on the outline of the fishery ecosystem plan and to provide guidance to the council in terms of where can we go with the development of the fishery ecosystem plan, where are we now, in terms of what we have done to date, and that's the planning team that Bill talked about at the beginning, and where are we heading.

Part of the where are we heading, specifically, has to do with the goals and objectives of a fishery ecosystem plan. Now, this is not written in stone. You have to present -- Bill will present this to the council in June, and they can say, well, we don't like any of that, and then you will have to start again, or they can see it as the beginning of the process to develop the FEP, and so your expertise, in terms of what you are doing here, is to provide them with guidance, in terms of here is the science that is behind all the work that want to do in the FEP, and these are the goals and objectives from your other FMPs that work for the fishery ecosystem plan, and these are the recommendations that we have, in terms of where you are heading.

These will also end up in the research needs section, so that the Science Center and the Regional Office and everyone knows where we're heading and what needs to be done in the future. One thing that we can do is we can ask the council to provide more specific terms of reference, if you feel that that's what you need, and then they will tell the TAP, after this meeting, that you have to do A, B, and C. That is something that we can take to the council, also.

KEVIN MCCARTHY: So then they have provided some fairly -- Maybe not specific, but they have provided some very general guidance in way that was not clear to me, and so they have provided sort

of our marching orders, at least in a very general way, but more specific than I realized, and so thank you for that, Graciela. That was very enlightening for me. I didn't realize they had given that level of guidance. That was my question at the beginning of all this, and it was unclear to me.

GRACIELA GARCIA-MOLINER: It was on the presentation that we had provided to the council during the creation of the TAP, and so that's -- They are not as extremely specific as you would like them, and probably we all would like them, but they are general enough that we can begin the process.

What Bill is saying, in terms of the goals and objectives, this is really the heart of the document, and so once -- They might take it under advisement, what you present to them, but they might want to see other things, or they might want to delete other things, and so that's up to them at the June 23 and 24 meeting.

BILL ARNOLD: I would expect this to be a bit iterative in its development, but I would like to continue with the development of this overarching goal, and, along those lines, would you bring up Tauna's quoted statement there and put it under the first bullet as well, so we can see if there's anything in that that we would like to include, and this is from our policy. We kind of have captured this, but whatever you think.

Let's go back to the overarching goal, and I think, at least for now, as a draft, we're good through "resilient and productive", and so do want to say, "marine ecosystem", because we're not going to say, "marine ecosystem" and "fishery resources".

ORIAN TZADIK: I think we have talked about, and maybe agreed at a previous meeting, that we all kind of are under the assumption that we're looking for marine ecosystems, and then we all kind of agreed that "habitat" leads to -- Healthy and resilient habitats lead to healthy and resilient fishery resources.

BILL ARNOLD: All right, and so we take that out? We take "fishery resources" out?

ORIAN TZADIK: That would be my suggestion, but I --

BILL ARNOLD: Let's do it for now. Okay. Here, I am hesitant to say occurring in the EEZ surrounding each island or island group, because we talked about the hierarchical nature of these things, and we could say, for example, that influence fishery resources, or something like that, because sargassum generating

off the west coast of Africa could influence fishery resources, and that's an important consideration within the ecosystem context, and so I am not personally supportive of saying "occurring in the EEZ surrounding each island or island group", but I am interested in hearing what you guys have to say.

JUAN CRUZ-MOTTA: Since this is a guidance document, and it has a non-regulatory status, I think we could -- This is more a question than a comment, but can we get rid of the "EEZ", I mean where it's going to happen?

BILL ARNOLD: Well, it would be my suggestion, and I don't like "EEZ".

JUAN CRUZ-MOTTA: Because, in this EBFM approach, I mean, all of it is interrelated, what is happening in coastal waters and away from the coast, and the example you gave is really good. It's related to stuff that is happening in other parts of the ocean.

BILL ARNOLD: All right, and so I suggest, for now, just deleting from "occurring" to "group", and we start working from there. Maybe we don't, and maybe we just delete the comma. That's an overarching goal, and I don't think it's our final one, but there it is.

MARIA LOPEZ: I just think that you need to have "with the fishery", because you are doing all of this for the fishery system, as a goal, and so you want to implement -- I mean, you want to achieve the goals, the broader goals, of the EBFM for the fisheries system through this FEP, in contrast with the FMPs that are just to achieve the goals for management for a particular island or for the fishers within the island, et cetera, and so I don't know, but I think it's --

BILL ARNOLD: Okay, and so let me propose some words of "resilient and productive marine ecosystems and the fishery resources dependent upon those ecosystems,". Okay.

GRACIELA GARCIA-MOLINER: Can you also spell out "fishery ecosystem plan" in the overarching goal, and so the overarching goal of the fishery ecosystem plan, and then, in parentheses, FEP.

BILL ARNOLD: Okay, and so just don't worry about what's past that comma. Just look at what's ahead of that comma.

ORIAN TZADIK: Bill, shouldn't it be "dependent upon them", with reverence to the ecosystems, as opposed to the resources?

BILL ARNOLD: Yes, and I'm sorry. I meant to say, "upon those ecosystems". The fisheries resources dependent upon those ecosystems. You guys don't have to like this, and I get it if you don't, but that's what I was thinking. You delete that "resources" right there and replace it with "ecosystems".

ORIAN TZADIK: I know you said to stop there, but I think you could just delete everything after "characteristics", and then we've got a working goal.

BILL ARNOLD: Comments, anybody?

TARSILA SEARA: Can we add the word "social", or "socioeconomic"?

BILL ARNOLD: Yes. where do you want to put it? Within the biological, ecological, economic, social, and cultural characteristics?

TARSILA SEARA: Yes, that works.

BILL ARNOLD: Perfect. I don't think everybody is perfectly happy with that, but, here, this is what we're working with now, and so let's hear it.

TARSILA SEARA: To be sure, is it social or socioeconomic?

BILL ARNOLD: Well, we have economic separately.

TARSILA SEARA: Yes, that's good.

BILL ARNOLD: I would suggest we keep those separate, but I would defer to the experts on that.

TARSILA SEARA: Yes, that's what I meant, that it's good separate, better.

BILL ARNOLD: Okay, and so I thought that Ori said to delete everything after "characteristics", and maybe you meant delete everything after "resources", but I'm happy with it, just as a draft, although I think we need more discussion on it.

ORIAN TZADIK: Either way. I was just trying to get rid of some redundancy, and that's all.

BILL ARNOLD: Jocelyn.

JOCELYN D'AMBROSIO: I have a question just about which resources we're referring to in that sentence that says "those resources", because resources is fishery resources, and so within the context of unique biological, ecological, economic, and cultural characteristics of those resources would seem to refer to fishery resources, but do you mean of the larger ecosystem?

BILL ARNOLD: It refers to fishery resources, and I can see your concern, because, of course, I don't know if the fishery resources have culture, and maybe they do, but I get your point, but that doesn't work -- Saying fishery resources is fine, but it doesn't work with the previous five categories.

It really only works well -- I mean, you guys talk about it. You could say it -- Go ahead.

KEVIN MCCARTHY: If we include the original phrase after "resources", which was something like "and the communities that depend upon them", that's what we're really talking about when we were thinking about economic and social, I assume, and cultural, I assume.

BILL ARNOLD: Yes. Good point, Kevin. "And the communities dependent upon them". How is that? If you see something you don't like, speak up as we're working through this, and I'm really anxious to hear from you.

ALIDA ORTIZ: When you have, in the second line, "approaches to ensure a healthy, resilient, and productive marine ecosystems", I would take out the "a", because then you say "healthy, resilient, and productive marine ecosystems".

BILL ARNOLD: Okay, and so that's a good start point. It doesn't have to be the end of even our draft, and we will be discussing this more, but let's just set this aside for now, would be my suggestion, and then people can think about it, and they may come back and say, well, you know, we can revise it in this way, and we can talk more about it.

I don't think we need to strive for perfection right now, because ideas may change with time, for us, and, obviously, because we don't need to get it too perfect, because the council is going to -- It's only a recommendation to the council, and it's up to them to determine exactly how our overarching goal will read.

I think that we can delete that second bullet of maintain

ecosystem function and fisheries sustainability. I think that was helpful, but that came from our policy, and Tauna provided that, and so I think we're done with that.

Now, rather than dealing with the sub-goals right now, the island-specific FEP goals, I think we should work on a few objectives, because I think what we're going to have is we're going to have some sort of -- They might be included in each individual plan, but we're going to probably have some higher-level objectives that apply equally across each island group, and then, as you work your way into this thing, you're going to end up, within St. Croix, some objectives that are much more specific to St. Croix, and maybe not, but I would think that's how it would go, and so I wouldn't mind talking a little bit about the more general objectives and at least come up with one, so that we have a start point for objectives.

We might want to -- Mandy provided the link to the Gulf of Mexico's goals and objectives. If you would like, I think we could pull that up and look at it, and, if not, that's okay too, and you might not want to be influenced by it, but what do you all think?

ORIAN TZADIK: Do we want to look at the list of goals that we've already put together?

BILL ARNOLD: Sure.

ORIAN TZADIK: I mean, it's in the minutes from the last meeting, if we want to take a look at it and put it up on the screen.

BILL ARNOLD: I think that's a great idea, Ori. Can you do that, Liajay?

LIAJAY RIVERA: In a moment.

GRACIELA GARCIA-MOLINER: The minutes that we corrected at the beginning?

BILL ARNOLD: Yes, and so that would be the minutes from the February 19 meeting, and I think they're in the G-drive, if you want to look at them there, everybody.

JUAN CRUZ-MOTTA: Ori, are you referring to the list of FEP goals that --

ORIAN TZADIK: Yes, right there, the draft goals from the

previous working group meeting.

JUAN CRUZ-MOTTA: Thank you.

GRACIELA GARCIA-MOLINER: Do you want to take all of those into the new document?

BILL ARNOLD: So take those eight points and copy them into the document we're working on.

LIAJAY RIVERA: So I just copy and paste the goals and the components to the --

BILL ARNOLD: We don't need the components. We'll talk about that tomorrow, but that's okay. I would like to paste them in under our overarching goals, and we'll start talking about these, but do you follow me? I'm not being real clear.

GRACIELA GARCIA-MOLINER: Take 1 through 7 from the document that we're seeing, which is the annotated agenda.

BILL ARNOLD: Yes, but 1 through 8.

GRACIELA GARCIA-MOLINER: 1 through 8. Sorry.

BILL ARNOLD: Can you push those objectives down a little, so that they're not right there? Can you just put some spaces there? There you go. Okay. So I think that these FEP goals, that list of eight goals, and I'm asking, certainly, and not telling, but those could be translated into sub-goals, or whatever you want to call them, but these would be the goals that would be included in each island plan and not this overarching goal that's above it, and that's what I'm thinking, or it's a start point, anyway, and so let me know what you guys think.

ALIDA ORTIZ: It makes sense to me.

BILL ARNOLD: Okay, and so, if you look them over, look at Number 3, and that's pretty specific. That's a data goal.

KEVIN MCCARTHY: I agree with you, Bill. That's a little too down in the weeds for this level, I think.

BILL ARNOLD: I think, for now, it's too early to be talking about georeferenced databases, and it's not that we're not working on them, but I'm not sure that's a good sub-goal to have here, and so let's take that one out and just cut it and paste

it down below a little bit, so we can hold onto it, but --

JUAN CRUZ-MOTTA: I agree that that looks more like perhaps an objective, and, in the same lines, I would move Number 4.

BILL ARNOLD: J.J., I looked at that one, and I wasn't so sure. I think we should talk about it. Would that be an FEP goal, to understand these dynamics, or is that more of a quantitative analytical outcome, or is it both?

JUAN CRUZ-MOTTA: Based on your reply to Stacey to one of her comments earlier about -- I mean, this one is a product of a research process, and, by the way, research that we haven't done. If we want to understand this system, not from an ecosystem point of view, we need multi-specific understanding of the system, and it's something that we haven't done so far, but that's --

BILL ARNOLD: J.J., let me ask you this. Number 4, if we had a -- If we had something down below, and I don't know where we're going to put these things, like establish georeferenced database, and these are much more focused tasks, almost, and, if we had this one down there, and it said to quantify and model the dynamics of fisheries and ecosystem services, now, that's a very specific activity, and I understand that should not be in there, whereas, the concept of just generally understanding them, would that be a legitimate sub-goal of a fishery ecosystem plan?

JUAN CRUZ-MOTTA: Fine. I mean, if you believe it should stay there, that's okay. Just one question. So, if we leave it as a sub-goal, it will be a task of our group to actually do that, to understand the dynamics, right?

BILL ARNOLD: No. That's what I am saying, is that these goals are goals that we wish to address, and, ideally, to some degree -- Well, we wish to address in the fishery ecosystem plan. The objectives are the things we're going to do to try to achieve those goals, but the goals, in my mind, are a little more aspirational.

The objectives are much more like establish a georeferenced database. To me, that would be an objective. That's an objective of the people working on this, and it's not a goal. It helps to achieve a goal, but it's not a goal in and of itself.

Quantifying the dynamics of the fisheries and their ecosystem

services, however we end up wording that, that, to me, would be an objective, but understanding it might be a legitimate topic of the fishery ecosystem plan itself, and maybe "understand" isn't a good word, because we're not going to. When we write the FEP, we're not going to understand it, but seek to understand, or something like that, I don't know, and what do you guys think? Let's have some input.

JUAN CRUZ-MOTTA: Perhaps it's something about the wording, and I'm not seeing it, but, as it is now, and I will give you an example. To enhance community resilience, right, which is a perfect sub-goal, and, in order to achieve that, we need to understand the dynamics of the fishery, and so I don't know what is the wording, but my comment was driven by the fact that 1 and 4 are not at the same level, because, to achieve 1, you need first 4, but perhaps it's how we word Number 4, as you suggest.

BILL ARNOLD: Yes, because, J.J., you need 4 as an objective, and you don't need 4 as a goal to do 1. You need 4 as an objective that you must achieve, basically, to get to Number 1, and other ones, and so I just want to make sure that our team is comfortable with the idea that goals are aspirations and objectives are more task-oriented, and talk to me.

JUAN CRUZ-MOTTA: Well, I definitely see it that way, and I don't know about the rest of the group.

MARIA LOPEZ: In one of the slides that I showed earlier, we had the expected benefits of EBFM in the U.S. Caribbean region, and maybe there is some information in there that could be used as a goal for the FEP, and so I don't know if you want to take a quick look at that at some time.

BILL ARNOLD: Okay. When you say "goal", Maria, are you talking about the overarching goal, or are you talking about these sub-goals?

MARIA LOPEZ: No, I'm talking about the sub-goals, what we're discussing right now.

BILL ARNOLD: All right, and so I want to suggest something. Our agenda calls for us to break for lunch at 11:30 to 1:00. I am perfectly happy sticking with that, and it's 11:30, and so maybe this is a good time to break, and people can think this over.

Actually, I think it is a good time to break, and, unless you disagree, let's break and mull it over, and then, when we come

back at 1:00, I would like to not spend too much time on this, but maybe we could spend another fifteen minutes getting everybody on the same page on this, and then we'll move on to our 1:00 topic, management and legal background, and so is everybody okay with that?

JUAN CRUZ-MOTTA: I'm okay.

ALIDA ORTIZ: I'm okay, too.

BILL ARNOLD: Okay. If I'm not hearing any objections, I will interpret that always as consensus, and so let's break. Let's get back here at 1:00, and enjoy your lunch, but, if you can, give this a little thought, and let's see if we can get some progress on it, although I think we're doing great, and I really am pleased. All right. 1:00.

GRACIELA GARCIA-MOLINER: Talk to you then.

(Whereupon, the meeting recessed for lunch on June 1, 2020.)

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June 1, 2020

MONDAY AFTERNOON SESSION (137:45)

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The Ecosystem-Based Fishery Management Technical Advisory Panel of the Caribbean Fishery Management Council reconvened via webinar on Monday afternoon, June 1, 2020, and was called to order by Chairman Bill Arnold.

BILL ARNOLD: As I said in the message I sent, I think we should stick with the agenda, for several reasons, not the least of which is I think we'll get a lot of information that we can use for developing our sub-goals, and certainly our objectives. I would say that I was really pleased that we got the overarching goal draft put together. I think that was a good accomplishment. The first person on the agenda is Jocelyn. Jocelyn, are you ready to go?

JOCELYN D'AMBROSIO: Yes, Bill. I'm here, and I'm ready to go.

BILL ARNOLD: Take it away.

MANAGEMENT/LEGAL BACKGROUND (138:48)

JOCELYN D'AMBROSIO: Thank you. Bill asked me to just give sort of a little bit of a brief background on the Magnuson-Stevens Act and some of the management principles, and so some things to keep in mind as we think about ecosystem management, and the goal is just to provide an overview of the way that Magnuson management works and then potential areas where the law currently maybe might allow for ecosystem considerations.

Then the way I will handle this is I will provide a brief overview of the Magnuson-Stevens Act and then describe the National Standard for fishery management, and these are the guiding principles for management that are set forth in the Act, and then describe required and discretionary elements of fishery management plans.

This is just at a very basic level, just so we're all on the same page, but the Magnuson-Stevens Act establishes federal authority over fishery resources in U.S. waters, which are referred to as the U.S. Exclusive Economic Zone, and it creates eight regional fishery management councils that are responsible for fisheries management within the area of their jurisdiction, and so there's a little asterisk on that, because the Secretary of Commerce has authority to manage Atlantic highly migratory species, and these are tunas, marlins, swordfish, and sharks, and then the Caribbean Council has the authority for species, other than those highly migratory species, within its jurisdiction in the U.S. Virgin Islands and in the waters off of Puerto Rico.

We are obviously, working with the Caribbean Council here, and it's looking at these fisheries in the Caribbean Sea and the Atlantic Ocean. There are seven voting members, and these are prescribed in the statute as well, and so that's the principal state official with marine fishery responsibility in the USVI and Puerto Rico, the Regional Administrator of the National Marine Fisheries Service in the Southeast Region, and then there are four members that are appointed by the Secretary of Commerce, at least one of which is from Puerto Rico and one from the USVI, and they have experience with conservation and management or commercial or recreational harvest of the fisheries at issue in this area.

The role of the councils is to develop these fishery management plans, or amendments to those plans, and that is their primary responsibility, and there are other responsibilities in the Act, but this is a primary one that we're focused on in this process, and the Act specifically says the council has to prepare those

fishery management plans for each fishery under each authority that requires conservation and management, and that concept is further defined in the Act and in the National Standards and the guidance on those standards, and so the National Standards, which we'll talk about next, are set forth in the Act, and then the National Marine Fisheries Service has provided some additional guidelines.

The main point here is that the council manages the fishery resources under fishery management plans, and they have to prepare those plans for certain fisheries that meet that standard of requiring conservation and management.

Then the nuts and bolts of the FMPs are they must be consistent with these ten National Standards, they have to have certain elements, required elements, that are set forth in the Act, and so it says -- We'll get to those later, but all of this in the fishery management plan, and then there's some discretionary provisions, which we'll also discuss, that could be included in plans, as long as they are consistent with the law and the standards for those discretionary provisions.

First, we'll discuss these National Standards. These are the policy objectives for fishery management, and then they are basically the guiding principles, and so they're to set forth Congress's goals for what fishery management will look like and what management will manage to. I put them all on the screen here, and these are the standards set forth in the Act, and the ones in bold are the ones that sort of take into account, in some way, and you might interpret it a little more broadly as well, but these are the ones that, just taking a quick look, I thought might implicate sort of ecosystem considerations in the way that this group has been talking about it.

One of the ones that is often talked about, and is a lot of the driver behind federal fishery management, is that National Standard 1, which sets forth as the goal of fishery management to prevent overfishing and achieve optimum yield of the fishery resources, and so we spend a lot of time trying to make sure that the fisheries aren't overfished, but that there is use of the resource for economic purposes, so that there is use by other user groups that are interested in conservation and trying to figure out that balance of what's the optimum yield of the resource, so that there can be continuing use of the resource, and so it's optimum yield actually on a continuing basis.

BILL ARNOLD: Jocelyn, can I interrupt real quick?

JOCELYN D'AMBROSIO: Sure.

BILL ARNOLD: Mandy sent us a paper of Patrick and Link that addresses optimum yield as all the excuse you need for ecosystem-based fishery management, and you might want to at least read the abstract of that paper, when you get a chance. Sorry, Jocelyn.

JOCELYN D'AMBROSIO: Not a problem. The other National Standards of managing stocks throughout their range, to the extent that that's possible, and they recognize that, as we said at the beginning, there are eight fishery management councils, and they have jurisdiction in particular geographic areas, but the fish might extend past those areas, and so, to the extent it's practical, they want to manage the resource throughout its range.

There is another one of allowing for variation and contingencies, and that's getting at that there might be circumstances that arise that need to have flexible management, and sometimes there might be more fishing pressure than expected, and so that sort of allows you to account for that and adjust fishery management as it happens, and it could be other ecological considerations that are occurring, and so it's just saying have some flexibility.

Have a plan in place, but allow for flexibility, because of unforeseen circumstances, and, again, that might be things that you're looking at and what are the elements in the ecosystem and how might they relate to each other and how could we have variation to account for some of these different elements of the ecosystem.

Considering economic impacts on communities, that's National Standard 8, and National Standard 9 is minimizing bycatch and, to the extent you can't, the mortality of that bycatch, and that is reflecting that you might be targeting a particular species, but you might encounter another, and so, again, in an ecosystem, there is more than just that single species that you're looking for, and so that's another way that it might be useful to think about the broader area in which the fishery resource occurs.

These I am just sort of leaving on the screen, so you can get a sense of the goals of fishery management and the way Magnuson thinks of it, and I don't know if you want to have a discussion of any of these later, but I just wanted to provide, in this presentation, just a real broad overview, and so these are the standards that the fishery management plan has to meet, and

then, next, I have a slide on how the fishery management plan would achieve that, and so these are the required provisions that Magnuson says your fishery management plan has to include these elements.

These are -- Each plan must have all of these elements, and so it must be consistent with the National Standards, and then it must have these sort of mechanisms to manage the fishery, and, here, I tried to just, at a quick look, color-code what might sort of more explicitly allow for and reflect or incorporate ecosystem considerations, and those are the ones in green, and then blue are provisions that might be developed taking into account information from an ecosystem understanding.

Then the red one there, the ACLs and AMs, that's one of the primary tools of fishery management, trying to prevent that overfishing while allowing for optimum yield, and you sort of set these, and "ACL" stands for annual catch limit, and you set those annual catch limits, and "AM" stands for accountability measures, the measures to ensure that you are meeting those targets and trying to ensure the long-term health and useability of the resource.

Some of these required elements of the FMP are measures to, again, prevent overfishing and rebuild and protect and restore and promote the long-term health and stability, and that's of the fishery, and we were talking about some of those terms when coming up with the goal, and I think that sort of jibes with the goal that you were discussing of protecting and restoring and promoting and stability.

You have to describe the fishery and specify a maximum sustainable yield and optimum yield, and those are, again, some measures that are developed to ensure that you are preventing overfishing, but allowing yield and use of the resource, and optimum yield is reduced from maximum sustainable yield under the Act, and there's a specific process to kind of come up with that, but the maximum sustainable yield is a little bit of a biological concept on what the fishery resource can sustain, what take from the resource.

Again, Bill was mentioning the Hawaii ecosystem concerns, and so they talk about the capacity to harvest OY, and so that's in blue, because that might be something that could be understood based on this ecosystem process. Then we have identify essential fish habitat, minimize impacts to essential fish habitat from fishing, and that's, again, reflecting that the fishery resource is part of a larger ecosystem, and so you have

the fishery, and then the habitat that supports it, and so the Act has provisions that require describing that essential fish habitat and then trying to minimize how fishing relates to that essential fish habitat.

10 is specify objective and measurable criteria, and I noted that in blue, because you might sort of be able to specify those criteria, understanding some of the ecosystem, and so those criteria generally are part of that criteria to understand when the fishery would be undergoing overfishing or is overfished and other measures to kind of meet that primary goal of fishery management to prevent overfishing, while allowing for optimum yield.

11 relates to National Standard 9, which we discussed on the previous screen, which is the bycatch, again reflecting that the fishers might be targeting a particular species, but that it exists in a larger ecosystem, and so you want to protect that ecosystem and the bycatch. Then 15, as we discussed, was the catch limits as one of the main toggles to do that.

All of those elements have to be in a fishery management plan, and then, on the next screen, we have some of the discretionary provisions, and so this is other sort of ideas that the Magnuson Act had for how one might manage the fishery, and so, again, here, I tried to color-code them, where things that might reflect ecosystem considerations are in green, and things that could be based on or developed with ecosystem considerations in mind are in blue.

Again, this was just my quick look, and there might be other ways to look at these provisions that would account for the ecosystem information that we're doing now, but some of the ones in blue designate zones and times when fishing restrictions apply, and that is sort of reflecting that there might be particular areas of importance to the fishery, and so you might want to limit fishing at that time, and you might develop those based on an understanding of the fishery that you develop in this process.

Then establish restrictions on catch, sale, and transshipment, and they have sort of trip limits sometimes, and annual catch limits are the overarching restriction, but there might be different ways that one would limit catch.

Gear and vessel requirements, and so you could say this gear is very destructive to this habitat area, and you might not want to use it in that area. Then assess and specify the effect of the

FMP on anadromous fish, and include harvest incentives for recent bycatch.

Again, that's reflecting that you're not fishing in a vacuum, and there is this ecosystem surrounding the fishing activities, and then conserve target and non-target species and habitat, considering the variety of ecological factors affecting fishery populations.

This really, 12 and 13, seem to reflect a lot of the thinking that's happening now, where we're trying to look more holistically at what is affecting the fishery populations, and, with that knowledge, tailor management to the resource, and so 13 is your catch-call, to prescribe other measures, requirements, or conditions and restrictions necessary and appropriate for the conservation and management of the fishery.

That is sort of a quick overview of the Magnuson-Stevens Act and the way that fishery management plans need to be developed, and so, again, they need to be developed with those National Standards for fishery management in mind, and then they have to have certain elements, and then the council has discretion to add some other elements for how it wants to ultimately achieve that conservation and management of the resource, trying to prevent overfishing and achieving optimum yield.

That was a little bit quick, but that was just what I wanted to provide, and, if there's any of these elements that, Bill, you want to discuss, or if you want to look at the National Standards and chat about that, or if you want to look at what mechanisms the FMPs must have, then we can do that, but I leave it to you for how you want to continue from here.

BILL ARNOLD: Well, I would like for the group to ask questions or have comments. I thought that was very good, Jocelyn, and very helpful.

TARSILA SEARA: I have a question. In the context of the FMP, and, if you look at the documents that you sent beforehand for the goals and objectives of the FMPs, a lot of those goals mirror the language in the National Standards, which makes sense, but, in the context of the FEP, how concerned should we be, in terms of using language that is in line with the National Standards and the Act itself? Is that a requirement, or is that something that we should consider? Is that something that would be helpful for the council? Like what's the difference here, in terms of the FMP and the FEP?

BILL ARNOLD: The FMP -- The Magnuson-Stevens Act basically directly governs those fishery management plans. It does not directly govern how we construct the fishery ecosystem plan, and so we have a more -- We have more flexibility in how we construct these goals and objectives and develop our fishery ecosystem plan.

Certainly we want it to tie back in, because we are guiding the management of the fisheries, and that's our primary obligation. It's not our only opportunity, but it's our primary obligation, and so we don't have to be as faithful or strict, but we can use that language, where we think it's appropriate, or we can use it verbatim, where we think it's appropriate, if we think it's appropriate, and I would have no problem with that. In any case where we tie the FEP to the FMP to the Magnuson, that's great. That's as tight a linkage as we can have with a law. Does that help? Go ahead, Jocelyn.

JOCELYN D'AMBROSIO: I was going to say -- Well, first, Liajay, if you could go back to Slide 8, so everyone can see those National Standards. Then I was just going to say that I agree with Bill that you don't have to be governed by this, in terms of what you want to do and in terms of how you're conceiving of what your goals are or how you understand the ecosystem, but, in terms of nuts-and-bolts outcomes, if you were able to say to the council that we understand the ecosystem in this way and this could help develop management that would minimize bycatch and bycatch mortality, or allow for variation of these contingencies with certain ecosystem concerns, I think that would be helpful, as Bill was saying.

If you're able to tell the council how this is useful, given their directive, given what the Magnuson Act says, have a plan that has these elements, and keep these standards in mind, I think that would be very helpful, but it doesn't have to limit the way that you conceive of the project, but it should just help inform maybe some of the outcome.

BILL ARNOLD: Is that good, Tarsila?

TARSILA SEARA: That's perfect. Thanks.

BILL ARNOLD: Sure. Any more questions? Okay. Well, I hope this helpful, and it is for me, and I think that this is very important information and guidance to keep in mind as you're thinking about these goals and objectives and what they might look like from your point of view, and I think everybody should argue their point of view, and then we'll blend them into a

final draft that we can submit to the council, to the extent that we can get that far.

As I said earlier, I don't expect that we're going to necessarily have a complete list of all of the goals and objectives, and I think that it would be good to be able to provide enough information to the council to guide them in their development of additional goals and objectives or modification of the ones that we provided them, et cetera, et cetera.

Otherwise, I think we should move on and get these updates, starting with the Lenfest project, and I think J.J. is going to take the lead on that. Is that right, J.J.?

JUAN CRUZ-MOTTA: That's correct.

BILL ARNOLD: Okay. So you're sure that you don't have any more questions for Jocelyn? Of course, you can ask later too, but -- Okay. Let's get J.J. loaded up and going forward.

GRACIELA GARCIA-MOLINER: Bill, hold on a second. We are putting all the presentations in the G-drive to be shared with all the TAP members, correct, and so that's no problem. If anyone has any problems with having that in that drive, let us know, because, otherwise, we would like the TAP members to be able to go back to any one of the presentations that they need, and is that okay, Jocelyn and anyone else is going to have their presentations there?

ALIDA ORTIZ: To me, it's perfect.

KELLY MONTENERO: That's okay with me.

JOCELYN D'AMBROSIO: Yes, that's okay. I sent Liajay a PDF, and so you can put that in the folder.

GRACIELA GARCIA-MOLINER: Okay. Thank you.

BILL ARNOLD: So a quick suggestion is to go ahead and put that draft goals and objectives document in there too, and then, if members want to go in there and start adding thoughts, they can do that, including basically almost immediately and through until we're ready to talk about them again maybe tomorrow, because any input to that would be more than welcome.

GRACIELA GARCIA-MOLINER: Perfect.

BILL ARNOLD: Okay. Liajay, we're going to go through all of

these, and so you can load them up. We'll start with J.J. and just walk right through them.

**UPDATE - ECOSYSTEM-BASED EFFORTS
LENFEST (163:07)**

JUAN CRUZ-MOTTA: Thank you. Most of the people in this meeting are familiar with the Lenfest project, but some of you are not, and so what I am going to do is use this presentation that we gave a few days ago, and we gave it to the Lenfest organization, who is funding this project, but I am going to just go straight to the slides that are relevant to what I want to say.

The first five or six slides here are basically an introduction, general introduction, by Bill about the whole idea of this TAP group and where we are at the moment. Liajay, can you go to Slide Number 7?

One protocol we decided to use as a group when we started meeting was the protocol developed by Lenfest to do an FEP, and you can see in this slide the five main steps of that loop. When we did an analysis of this process, we identified that the different steps of that loop were driven by different stakeholders or different groups of people. Obviously, everybody was involved in all of these steps, but what you see in that slide is the group of people that is mostly involved in each one of those steps.

When we were approached and engaged by Bill, who was leading this EBFM approach in the region, and, when I say approached, I mean myself and Stacey and Tarsila, and the idea was to come up with the money, or the funds, to focus on Step Number 1, which is basically to answer the question of where are we now, and, basically, that first step is a description of the fisheries systems as they are working now.

As you can see, on the left, you have the three steps that involve developing a conceptual model, and the second is to select and calculate indicators, and three is do an inventory of threats. Then those were related to scientific questions or scientific processes, which you have on the right, and we can make here a connection between the column on the left and the column on the right.

If we strictly follow the Lenfest protocol, those three steps on the left are achieved using stakeholder engagement and expert opinion. That's why we call it a qualitative approach, and so Lenfest is mostly a qualitative approach.

As you can see, the three steps on the left can be related to two steps on the right, and the only thing that we're missing is the hypothesis bit, which then we proposed to do this with the Lenfest proposal. To test the hypothesis derived from those models and from those observations, then we proposed to use a quantitative approach.

As you can imagine from this, the Lenfest proposal, which is a very, very specific project to answer very specific questions of Step Number 1 -- I mean, the Lenfest project is by no means the complete view of everything we have to do in this group, and it's at least what is a very important first step to understand where we are, and so, basically, what you have in that slide of the objectives of this project, but, most importantly, the Lenfest proposal, or project, has these two principle columns, a qualitative column and a quantitative column.

The idea is that, by following the four steps in each one of those columns, we will be able to do two things. First of all, to actually come up with a model of how the fisheries are working in the Caribbean, and second is to test that model, using actual available data, and third is, whenever the data is not available, at least we will identify that gap, so we could focus future research.

Bill, this is a general description, and, everybody, this is a general description of what the Lenfest project consists of, and I don't know, Bill, what you recommend for the benefit of the people that haven't heard the details. If you want, Tarsila and Stacey can go through the details of the qualitative and the quantitative approach, or do you want us just to go and tell you what is the status and what are we up to with all of this?

BILL ARNOLD: I think that it would be beneficial to the group to at least get some of Tarsila and Stacey's contributions, because they are important in showing what we're up to and where we are.

JUAN CRUZ-MOTTA: I thought so. Thank you very much, Bill. Tarsila, would you like to go ahead with the qualitative bit?

TARSILA SEARA: Sure. Here, we're just describing -- I mean, I think, as J.J. mentioned, a big component of this project, and most of the qualitative aspects of this, will be based off of the construction of conceptual models, and so I think most people are probably familiar with what we're doing, but I can just very briefly describe constructing these conceptual models,

which is a stakeholder-driven approach to identify key elements of the ecosystem and how they're related to each other.

We are going to -- I mean, the council is going through the process of developing these conceptual models, and we will be able to use those conceptual models that are being built as part of that effort in this project, but we are also going to run a workshop so that we can maximize the representation of stakeholders.

We are also planning to use some questionnaires, so we can expand some of the data that we get, so that we can not just get some important information from the workshops, but also we can add more data and do further investigation of some of the outcomes, if we are able to collect some additional data as well.

Here, we just had an example of what one of these conceptual models look like, and this is mainly for illustrative purposes, and the idea is that we're going to end up with multiple of these, and, itself, these are very important pieces of information for us, in terms of what each one of these conceptual models mean, but one of the important steps that we're going to take in the qualitative approach is to combine these multiple conceptual models into a social model.

The idea is to create these social cognitive maps, and one way to do this is to take a consensus approach, and so we would be averaging these models and combining them into each other. This is just an animation to visually represent what it is that we're doing, in terms of these social cognitive maps, and it's just combining them. Like I said, one approach would be to average them. That way, we get what we call a consensus map, and we'll do this, of course, because we are going to build a matrix of all the components and how they are linked to each other.

Just to summarize how we're going to be using this, the main objectives of the qualitative approach here, like I said, this will allow for visualization and analysis of stakeholder perceptions, and this goes for each one of those conceptual models, but also for the social cognitive map, and this will help us identify priorities and risk factors, and so key elements that will show in multiple of these stakeholder conceptual models, and that will also help us identify data gaps, and so, if there are very important elements and important relationships that we don't have data for, that will help guide this future research.

In the context of the project, one of the main objectives of the qualitative approach is to actually develop that conceptual model, and so to help us develop hypotheses that will be tested in the quantitative approach, which is what Stacey will talk about, and I think maybe J.J. will come back and talk more about how we're going to do that.

STACEY WILLIAMS: Thank you, Tarsila. Some of the data sources that we'll be using for our quantitative analyses include the fishery-independent surveys, and these are just scientific surveys, and the databases that we have organized so far come from the National Coral Reef Monitoring Program, and then Puerto Rico and the USVI both have coral reef monitoring programs. Then SEAMAP data and CRES data, and that was surveyed and they collected in La Parguera.

We'll also be using fishery-dependent surveys. These are just landing and catch data, as most of you know, and we are now in the process of obtaining landings from DRNA in Puerto Rico and also the Department of Planning and Natural Resources in the USVI, and also the Southeast Fisheries Science Center and the TIP data, Trip Interview data.

Also, we will be incorporating environmental and anthropogenic data. These include a wide range of variables, including oceanographic features, like current and wave exposure, disturbances, like hurricanes and sea surface temperature anomalies.

Then rainfall, connectivity, habitat features, such as what is the habitat, or habitat variability, or heterogeneity, and also it will include anthropogenic variables, and some of these anthropogenic variables will overlap into socioeconomic variables, but some of the anthropogenic variables that we are now collecting are like human population density, how close are you to that site from a fishing villa, that type of data. Most of this environmental and anthropogenic data is coming from satellite imagery, and we are working closely with Dr. Iliana Chollett, and she's an independent contractor out of Ireland.

Lastly, we will be using socioeconomic data, and, again, we are in the process of collecting this data, or organizing this data, obtaining this data, and this includes community sustainability and vulnerability indices, and this includes the fishery engagement and reliance and the social vulnerability indices. We also would be collecting post-disturbance assessments by Juan Agar and coral reef dependency, and, also, fishery census data from the USVI and Puerto Rico.

This is just to show the audience the extent of our data, specifically for the fishery-independent surveys, and so these were the datapoints collected by the project in 2014 in Puerto Rico. Points were added in 2016, and so both fish and benthic assemblages were surveyed at each of these points.

In 2013, the NCRMP project started in the USVI, and so this would be around St. Thomas and St. John. Then, in 2015, you can see that St. Croix was added. Then, in 2017, again, more points were added.

We also will be incorporating into our quantitative analysis the Puerto Rico and the USVI Coral Reef Monitoring Program, and these are at permanent stations, and, in the USVI, they have been monitored from 2005 to 2010. In Puerto Rico, there are more points, and so forty-two sites, that are currently being monitored biannually, and some of these sites have been monitored since 1999. Lastly, this is showing just the data that we are organizing from SEAMAP, and you can see this data ranges from 1999 to 2018.

You can see that there's a lot of datapoints, but what I wanted to really highlight in this slide was that there are some -- We are working with a lot of variability, from temporal variability to spatial variability. Some datasets, like I said, are from 2005 to 2010, and some datasets are from 1999, and then we have areas where it's lacking some data, such as like the north coast of Puerto Rico, and you can see that there's not that many datapoints along this coast, and so there are some limitations to our study, because we are constrained by the spatial and temporal variability of our data, the datasets.

This was just to give an example of what we can do with our data, and so, if local stakeholders felt that turbidity was influencing say the fish assemblages or fish structure within the U.S. Caribbean, what we would do next would be to analyze the spatial and temporal variability of turbidity, and one way we can do this is with satellite imagery, such as the k490, and this is the diffused coefficient at the wavelength of 490 nanometers, and this is a widely used proxy to look at turbidity in the water column.

You can see in this map that there is spatial variability in the U.S. Caribbean, especially between the USVI. As you can see, the water is relatively clear compared to that of say like the western part of Puerto Rico, where we have large rivers that discharge, and you can see that, also, it varies from inshore to

offshore, and so this could help us understand and quantify the fish assemblages or fish trophic structure and how that correlates to turbidity.

These last two slides are looking at how we can use the socioeconomic data, and I didn't have a chance to map this like I did the k490, but I just wanted to show the audience how it varies between just two cities in Puerto Rico. You can see the CSVI, and this shows poverty, population composition, and personal disruption.

The background picture is the City of San Juan, because this is the capital of Puerto Rico, and it resides 400,000 people, and you can see that the poverty is pretty low, and personal disruption is pretty low, compared to the other municipalities in Puerto Rico.

Then, in Salinas, if you go directly south in Puerto Rico, you have reached Salinas, which is another municipality, and you can see it's right next to San Juan, and you can see that poverty and personal disruption is much greater than San Juan, and so this can also -- If the local stakeholders felt that socioeconomic factors, like wellbeing or percent employment -- If it was influencing say the fisheries systems of the U.S. Caribbean, then we can look at what socioeconomic factors could then be indicators of say the fishery systems. I think that J.J. will take it from here.

JUAN CRUZ-MOTTA: Thank you, Stacey. What I would like to show you now is an example of Steps 2, 3, and 4 on the quantitative column, that column on the right, and, for that, I'm going to use a very, very small example, and it's just a minimum part of all the data that Stacey described, and that example comes from the Puerto Rico coral reef monitoring program, for which we have forty-two stations.

Actually, we have a lot more, but, out of those forty-two stations, all the stations that we have, the longest time series -- Just for your reference, this monitoring program uses transects at five per sampling site, per station, and it has been done between 1999 and 2019.

What you get from each one of those stations is the estimation of abundance or biomass of all the fish species that you can count on the reef, and, also, you get data on relative cover of benthic species, mostly coral species, and, as I said before, this has been done between 1999 and 2019.

The important thing about this slide is that -- I want to stress this, because this, in our opinion, relates directly with ecosystem approaches, and it does so because -- You can see here that the data that we're getting, and, actually, the problem that we're trying to understand, is, by definition, multi-specific, or, in this case, multi-variate. It doesn't matter if you're looking at the biological information, in this case, or, if you're looking at the environmental information, or the socioeconomic information, or the habitat information. All those pieces of information are, by definition, multi-specific, or multi-variate. You have multiple variables in each one of those datasets.

That means that all the lines in that data matrix, all those species, are, by default, interrelated to each other, and so they are correlated. That means that whatever happens to the groupers is going to affect what's happening to the snappers and the parrotfishes, and that is related to what is happening on the reef, and so we have to come up with a way that actually takes into consideration that relationship.

As it is now, most of our efforts have been directed at understanding what is happening to one species at a time, and so one of the challenges here, and one of the things that we're trying to address, is how to look at the whole assemblage and how that is related to the benthic assemblages and how does that relate to the socioeconomic indicators as a whole. What you will see in the next few slides is an example of how we can go about it.

What you have in that slide is just what is known as a multivariate ordination, and it's not more or less than a map, and, in that map, where you have -- What each one of those blue dots, or blue squares, represent is the actual structure and composition of the fish assemblage, using the biomass data, for a single location. Out of the forty-two, we use only one location, Cayo Coral in this case, and then you can see how the structure and composition of the whole assemblage changes through time, from 2005 to 2013.

With that, to start with, we can identify the moments in which changes happen, and, also, we can identify the direction in which those changes occur. We can also identify what are the individual species that are related to those changes, and, in this example, I only used the subset of species that are managed in the region and not the 247 species, but I only used the eighty-something species that are in the list of managed species.

Please note that, in this example, there are species on the right of your screen that you could say are decreasing through time, whereas those species on the left of your screen are increasing through time, and we can also see, from this, that all those species that are parallel to each other, all of those lines that are going in the same direction and are close together, we can infer that those species are correlated.

Please note that, in the case that I showed you before, the data is telling us what are the species that are increasing or decreasing, but we could also go using the logic on the other side, and we could say, okay, what are the indicators that the stakeholders propose that were important in determining the structure and composition of this fish assemblage, and then what you have on the right is just some of the typical indicators that are listed by different groups of people of important indicators for fish assemblages, like biomass of herbivores and the diversity of the herbivores or biomass of the top predators or biodiversity, et cetera, et cetera.

What we can do is say, okay, take that information from the stakeholders and estimate those indicators out of the data that we've already got, and then we can establish those relationships, and then, for example, here, we can actually test which of the indicators that the stakeholders propose are actually related to the changes that are actually happening in nature, and so please note that, in this case, diversity, evenness, and total biomass, which got relative small lines, or vectors, will be as important as the other indicators.

I am showing you this and taking some time, because then you can see a contrast between the qualitative approach and then the quantitative, and more than a contrast, but the complementarity of these two approaches, right, and what we are doing here is actually testing, or evaluating, what the stakeholders are saying, or proposing, or even the experts, right, and one thing that I want to mention is like, in this case, I have used fish assemblage indicators, but you can use habitat indicators.

You can go, in this map, and start putting on top of that map coral cover, diversity of corals, percentage cover of algae, you know, the typical indicators that we will use for the benthic habitat. Furthermore, we can use indicators related to the socioeconomics instead of habitat or fish assemblage.

By doing that, we can repeat this exercise not only with the fish assemblages, and that's what you have on your left, but we

can repeat that with the actual environmental variables or the socioeconomic variables or the habitat variables or the fishery-dependent variables, and this is just a hypothetical result, because we are in the process of getting the environmental data, and we don't have that data yet, but, eventually, we will analyze that data, but the approach will be a similar approach as I showed you before.

Then you see, in this hypothetical example, I got then my temporal trend for that station on the left, for the fish assemblages, and then I have exactly the same temporal trend on the right, but, in this case, it's using the environmental variables. Then, with this approach that we're going to use, we can actually relate these two and actually define, or determine, whether there is a relationship between that group of environmental variables and those 247 species in the fish assemblages.

Now, the situation is a little bit more complex, because, instead of only two types of data, as I showed you before, we actually have five, at least, right, because some -- Like, for example, some stakeholders identified more boxes than this, and I will give you an example of the SSC. The SSC has identified eleven different boxes, but I am showing you this example only with five boxes.

What we would try to do is do this multiple -- Establish these multiple relationships among all those boxes, but one thing that I want to highlight here is that the box in the middle is our fisheries box, the thing that we're trying to manage, and the tools to do that is a family of tools that are known as structural equation modeling, and, if somebody is interested in the mechanics, I am happy to explain that, but the important thing here is that the final product will be something similar to what you have here in this slide, where the boxes, or the ellipses, are the main elements in our model.

Like, for example, in this case, it will be environmental variables, human impacts, and distance, and that's the location, and how those three boxes affect the species dissimilarity, in this case coral dissimilarity, and there are many ways of doing this, and that exercise you are looking at is mostly linear models, but now, in 2020, we can model that in non-linear ways.

The important thing is we will be able not only to relate the big boxes, but also to identify individual variables, or species, within those boxes that are important.

Finally, we will be able, with this exercise, to relate the conceptual model on your left with the quantitative model on your right, and this example is taken from the literature, and it's terrestrial ecology, and it was made with plant diversity, and it's a published work, but the logic behind that study is the one that we're going to use, and the idea is then to compare the conceptual model and the quantitative model from what we have gathered so far.

The model on the left will be a lot more complex, or with more boxes, from what we have seen from the DAPs and the SSC, than our model on the right, but that's perfectly fine, because the boxes that will show on the left, but not on the right, will indicate, or will inform, the management authority what research they have to fund, and it will identify these gaps.

This is some final considerations that we shared with the audience last week, and the most important thing about this Lenfest proposal, or this Lenfest project, is that it actively will contribute with this working team, this EBFM TAP panel, on building the FEP. This project is going to give you very important information to actually build that plan.

As you can see, and as Tarsila explained, the conceptual models are key, and a lot of our efforts are going to be focused on getting those conceptual models, not only from the DAPs and the SSC, but also from experts in the different islands that, of course, are not members of the SSC, and, most importantly, for a different group of fishers whose opinions might not have been captured by the DAPs.

In general, this is a three-year project, and the four products are those listed in the slide, which, basically, we have more or less tried to communicate to you with this presentation, and what we will be hearing next, and this is very important, is this project is not an isolated effort, and it is being done, and we have some synergistic relationship, with other projects, like for example the ecosystem status report that Mandy and Kelly are putting forward. If there are questions, I am happy to take them, or, Bill, if you need us to talk about something else, please let us know.

BILL ARNOLD: J.J., I thought that was very good, but there may be questions. If so, bring them on.

ALIDA ORTIZ: I do have a question, and probably we will be talking a little bit more when I give you the information about the stakeholder strategy that we have been working with, but, in

the Lenfest project, you are consulting stakeholders, and this is my question, but is it specifically for the issues that you have in the Lenfest project, or is it the wider consultation that takes into account what the fishery ecosystem plan and the island-based management plans, ecosystem-based management plans, have to take into account, because we might be working among the same population, probably with very similar questions, or even different questions, but it is the same individuals, and am I correct, or am I more confused?

JUAN CRUZ-MOTTA: Tarsila, would you like to take this question?

TARSILA SEARA: Sure. Alida, that's a very good question, because I think it would be very helpful if we maybe talked more about these efforts, so we're not duplicating them, but the idea here, the main goal of the stakeholder workshops, would be to construct the conceptual models with fishermen that would not be necessarily in the DAP context, and so our goal would be to sort of expand that group of stakeholders.

We had initially also talked about expanding that to include other stakeholders, but I think that was before -- At least for myself, it was before I was aware of some of the efforts that you were leading, and so it would be really helpful for us to discuss and make sure that we're not duplicating efforts. Does that answer your question?

ALIDA ORTIZ: This is very good, Tarsila, because that's something that has been worrying me a lot, and, when I make my presentation a little later today, we will discuss that, and we will see then what is our common strategy that we can work, probably with the same group, but it would be different questions, and, at the end, stakeholders are satisfied and happy that they had been willing to give information. So great.

TARSILA SEARA: Absolutely, yes. I couldn't agree more.

BILL ARNOLD: All right. Then I suggest we move on, and I believe that Ori is ready to go with his presentation. Let us not if not, Ori.

UPDATE EBFM TAP (204:38)

ORIAN TZADIK: I'm here. Just fair warning that there's a lot of storm clouds, and so it comes and goes. Just to start off, I wanted to say that that was a great presentation by J.J., Tarsila, and Stacey. Thank you for that. It humbles me a little bit to be going after them, and it's a really great

project, and I'm excited to be involved with it, and I'm excited to see how it's all developing.

Bill asked me to give a bit of a background on what's been going on with this group and kind of why we're all sitting here today and how we got to where we're going. I want to caveat this with everything you see in this presentation is not work that I have done, and so I am not necessarily the expert on any of this stuff, and, instead, I am just going to be presenting what has been done primarily by our previous versions of Liajay, and so I will go through that, and I think the best thing that could come of all this is if people who are interested go through the G-drive and read through some of these reports, and, at some point, Liajay and myself, and probably Graciela and Bill, could update her a little bit more on some of these reports as well and hopefully kind of follow-up.

I will start with a bit of a timeline, and this is definitely not entirely inclusive, but what I want to get across here is that this FEP has taken a lot of different forms already. We're on the timeline, and so, basically, like I said, just to let you guys know, this has all taken different forms, and so part of the conversation earlier, in terms of the different components of the FEP, I think, in my opinion, everything is kind of on the table.

As you guys see, in 2016, it was when we had these initial discussions about the FEP, and then, in 2017, somebody named Cindy Meyer was leading what we had called at the time the FEP Development Team, and that was a much smaller group of mostly people that are on this call, but it was a handful of folks, and Cindy's vision was actually much more of an interactive tool, an online kind of -- Like an interactive tool and a decision-making tool and that sort of thing, and it was very kind of theoretical, at the time, because we didn't know what we had.

Since then, we have kind of evolved, and, in 2018, Bill became the official lead of the FEP Working Group, is what we called it, and I have here that that's when the ball really got rolling, and what I mean by that is that's when we started getting reinforcements. That was when Mallory Brooks became the intern over at NOAA and was able to help pull a lot of this data together, and, as you will see, some of the contributions she made have been great.

Tauna Rankin was able to spend a few months with us in 2018, and has since continued the work, continued to be a contact for us, and Mandy Karnauskas kind of got in touch with us at that same

time, and she has continued to serve in a really helpful advisory role, and the same with Adyan Rios, and so we've had -- Things have started -- Kevin McCarthy came into the mix at about that time too, and so we started to really get the ball rolling in that time, and what I am just wanting to point out here is that we're starting to get a lot more momentum on this, and it would be nice to kind of be able to capitalize on this.

In August of 2019, the council decided that the FEP Working Group didn't conform to the Magnuson standards, and so they needed to formalize the working group, which is what they did in October of 2019, through a virtual meeting.

In February of 2020, we had our initial call, and we all decided that the best thing to do would be to get together in person, and then here we are, and so, obviously, we can't get together in person, but this is the next best thing.

I am going to start off with a little bit of the work that Mallory did. When Mallory came onboard, she came on as a summer intern with NOAA, and what we had decided at the time, as part of the working group, was that, as Bill had mentioned, we had identified the fact that the Caribbean was not necessarily data poor, but more like data disorganized, and so one of our primary objectives was to gather all of the datasets and identify the data gaps.

That's where Mallory really came in, and that's what she started out doing, and so the idea was to not only collect the information, but also kind of describe some basic trends in the data, and we envisioned Mallory along for the ride for the long term, and so a lot of this was getting her familiar with datasets and some analytical techniques as well.

Once she finished her internship, the EBFM liaison position at the council had been discussed and tentatively agreed upon, and so there was a good four or five-month period where Mallory was going to be unemployed, but with the promise of kind of the ability to come back in the new year, and so we at Pew were able to contract her, much in the same capacity she had been the intern at NOAA, and we kind of just continued along with all of that work, and so the primary focus of Mallory's work was collecting all these data and identifying the data gaps and then exploring some of these relationships between the marine community and the habitat and also then kind of exploring further collaborations with other stakeholders.

Mallory's major contributions came in the form of the data

collection of those datasets that you see there. The ones that have stars by them are just very kind of fragmented dataset, and they don't have long-running datasets. They're only from a single year or two years, and so she didn't do many analyses on those, but then she was able to do some of the analyses that you see there on the right, and I'm going to run through them very quickly, because Stacey and J.J. and Tarsila have actually mentioned a few of these already, but I just want to give you an idea of what has been going on.

Much in the same way that J.J. described the ordination plot in his presentation, what you're looking at are two ordination plots of all the sites from the Puerto Rico coral reef monitoring program, but we're looking at the benthos here. Obviously, you can be looking at the fish, but, in this case, what Mallory did was look at the benthos.

What you can see are the different groupings, and so we saw that -- I believe this is across all years too, but you see the spatial groupings, and those on the left-hand side are just different reefs in La Parguera, and then, on the right-hand side, you're looking at the depth zones, and so there's nothing ground-breaking here, right? The benthos differs by location and depth, but it is semi-quantified now in a form that is kind of relatable and immediately accessible.

Then this is the same sort of analysis on the NCRMP, or the NCCOS, and it's actually the NCCOS data, because the NCCOS turned into NCRMP, but this was done at three different locations, one on St. John, one in Buck Island, and one in La Parguera, and, again, these -- You can see these different groupings. Now, what Mallory did is she has an entire report on kind of each one of these graphs that I am showing you, and she has many different graphs, and I just kind of pulled one from each section of the report, to show you kind of what she was doing.

She breaks it down much further and shows you the groupings and describes how tight the groupings are, things like that, and then what we also did, on the right-hand side, is you're looking at what are called influence vectors, and so, if you look at the top-left there, it says gorgonians, and so the length and the direction of the arrow correspond to the strength and the directionality of that variable, in this case gorgonians.

What this graph is suggesting, with regard to gorgonians, is that La Parguera had more gorgonians than you would see in St. John or in Buck Island, and so, again, this was just a way to

kind of quantify what we were looking at, and we have -- In the report, it will say that we have NCCOS data from the year 2000 to 2011, and it's all found here in the G-drive, and, as some preliminary analyses, what you can see are that we're seeing benthos grouping by, in this case, island. That was kind of where she was going with that in all of these datasets.

Then this is the same, and this was done with the CARICOOS ocean monitoring buoys, and what she did is each one of those labels is a different buoy, and then she has the buoy name, the year, and what she did then was average them across seasons, the wet and the dry seasons, and so, if you look at the top of the graph, you see Ponce 2017 WET, and so that is an average of all the values from that buoy across the 2017 wet season, and then, when we looked at this, this is a PCA, a principle component analysis, and, again, in this case, the influence vectors are just overlaid on it, and so not terribly surprising, but, on the right side of the graph, you notice kind of all the wet season averages, and then, on the right side, you see all the dry season averages.

Again, she speaks to this in the report, but the basic thing that you're seeing here is that, in the ocean monitoring buoys, we see differences in atmospheric and water quality parameters when compared from the wet and the dry season.

Then these were the stations that I touched on that we don't have a lot of data, but she did run a MANOVA across these two stations, one in Salt River in St. Croix and the other one in La Parguera, and, again, not terribly surprisingly, you see a difference in the physical water quality parameters between the two sites.

Then some of the water quality data that she put together were from the STEER water quality monitoring program, and then, on the next slide, it's just the La Parguera water monitoring program, and what you can see are just average nutrient data for six sampling stations here in St. Thomas, and it's important to note that I believe this was across like a couple of months in one summer, and so, again, it's just kind of giving a summary of -- I think what is becoming more and more apparent, as that Lenfest project goes on and as we keep getting all these different people involved, both at NOAA and at the council, is that there is actually a lot of data out there, and we just have to pull it all together, and so the attempt here was to kind of just give some summaries of what these data say. Again, this is the same thing at the La Parguera station, but it was only three years and less variables.

Then these next two slides are what Mallory really tried to sink her teeth into a little bit, and this was to get fish communities and how they related to their habitats, and so she was overlaying fish -- She only ever got as far as single populations, and so single species, and she did a few things with kind of just like species richness, just species counts, but the idea was to eventually incorporate a community metric and compare that to the benthos, but we only ever got as far as single species, and, in this case, I guess this is multiple species, and this is all the parrotfish, but what she created were these heat maps.

I know you can't see it very well, but the red dots indicate high heat, and then the blue dots were low heat, and the idea was to kind of quantify and overlay the parrotfish abundance on the benthic map, on the benthic habitat, and look for -- We were going to do some spatial analyses and see how they lined up with each other.

Then an extension of that work was to do kind of predictive mapping, and so she would take the data that you see on the left, and so, in this case, it's a single parrotfish species, and this is the stoplight parrotfish, and that is a single year, and she did this for every year of the NCCOS data, and I believe only in La Parguera, but, again, this is all in the report.

What she did is, on the left, you see all the sampling locations from NCCOS in La Parguera that they observed at least one stoplight parrotfish, and then, based on the actual values on the right-hand side, she developed this kind of Krigging mapping system, where it was supposed to predict -- If you're not at one of the sampling locations, and instead you're in Random Location X, what would you predict the parrotfish abundance to be in that location?

Unfortunately, this is where we lost Mallory, and so she was really -- These last two projects, and I think Bill would agree, she had a lot of -- She really kind of had a lot of the background done, and she created this foundation, and it looked pretty good, and it looked like it was going in a promising direction, and then she took another position elsewhere, and so hopefully these are things that we can, like I said at the beginning of this, we can kind of continue the conversation with Liajay and others who are interested.

After Mallory, we had Meaghan Faletti who joined the team, and she was not with us for that long, and so just kind of the

summer of 2019, but she was the EBFM liaison to the council when we really started ramping up the conceptual model work, and so, as we've gone back through some of her notes, Liajay and myself and Sarah and Graciela, we have noticed that Meaghan was very organized, which was very much appreciated, and she took some good notes and did some interesting work. It was primarily to do with the data collection to do with the conceptual models, and she was instrumental in some of those original conversations and kind of how to steer that process.

This is just repeating that, that, in particular, she was at the DAP meetings where we derived these conceptual models. Whatever we have for the conceptual models of the DAPs, Meaghan was kind of driving that bus, for the most part, and then she also did something that I didn't even realize until I looked back through the report, that I will show you in a couple of slides, where she started to get at a few of these what will eventually come out of this, which are like the ecosystem indicators, but she started doing some very preliminary analysis, in terms of what metrics, what variables, were being cited more or less by different stakeholders, and I will show you that in one second.

These are the two conceptual models that Graciela alluded to earlier that are pretty much done, and what you can see are different colors of connections with the red and the blue, which designate a positive or a negative relationship, the blue being positive and the red being negative, and the thickness of those lines indicates the strength of the relationship between the two boxes.

I understand that you probably can't read any of these boxes, and that's fine for now, but I believe that most of you have already seen a lot of these anyway, but it's interesting, because these are kind of the same size group of people that were given roughly the same amount of time to derive their conceptual models, and, as you can see, they are very different, obviously, but the next step in this process is going to be finding how they're actually similar and how they differ and then how we can kind of create a better product out of all the individual parts.

Then this is just what I was -- Again, I know you can't read each line item, but that doesn't matter. It's just to get the idea of what's going on, and, again, these are all in the report, and so I would highly recommend anybody interested to run back through those, but what Meaghan was doing here was comparing the Puerto Rico, St. Thomas, and St. Croix DAPs to each other, as well as the SSC -- What we were calling at the

time at the SSC general model.

It's basically ranking what she's calling the driving components and the affected components, and that's just what has arrows coming out of it versus what has arrows going to it, and so, for those of you who probably can't read most of this, we have the Puerto Rico DAP -- Right at the top, the thing that's going to affect the most individual variables is effective management.

That's what the Puerto Rico DAP has at the top of their list, unknowing to them, and they just -- These are kind of the metrics that were pulled out of it, and so Meaghan was instrumental in pulling these lists together as well.

That was the work that was done by Mallory and Meaghan, for the most part, with a little bit of other stuff kind of sprinkled in there, and so where are we now, and where are we going? These are the phrases taken straight out of the Lenfest protocol and the blueprint, and I am by no means suggesting where we should be going, but I'm throwing some things on the table here.

What I did notice, when Bill asked me to do this, and I just thought to myself, well, that's no problem, and I will look through the G-drive real quick, is that we have lots of G-drives now. The original intent, which was to streamline all of these datasets and get them all in one place was great, and then we started -- Personnel started turning over, and so now things are in different places and owned by different people and that sort of thing.

I would recommend that that should be one of the top things that we get doing, that comes out of this meeting, is that -- I am happy to help Liajay and Graciela with this stuff, which would be streamlining the G-drives, figuring out what we have and where to put it.

The conceptual models, as you all know, are well on their way, and they're an ongoing process, and we all know that the next step in the process is getting more conceptual models from different stakeholder groups and then melding these models. What I think is interesting, and I think should be a point of discussion amongst this group, is that, once the FEP is derived, does the SSC model actually get melded in with the other ones, or is it a stand-alone model?

I think that there is utility for both of those, because the SSC -- As I alluded to earlier, the DAPs each took I think three days, total, to create their conceptual models, and then the

SSC, to date, and I don't know, but, if I had to guess, I'm guessing around nine full days, and they're not done yet, have been allocated straight to this conceptual model, and so, just by virtue of the time spent on it, it's much more detailed.

They also have a different perspective on things, and I do think that that should be noted. These are, theoretically, the best and brightest scientists that we have in the region to speak to these issues, and so their model is, just by virtue of the group making it, is going to be very different than these other ones, and I think that's a consideration and something interesting I think that we're going to be -- I think we have a bit of a nice opportunity here to maybe do something a little bit different in this FEP.

Then, as the Lenfest loop talks about, start thinking about these future products, and, like I said, I'm humbled to be going after the Lenfest grant group, who is, obviously, already knocking some of this stuff out of the park, and so I'm really encouraged to see some of that stuff going on.

All I want to say, to end this, is I just gave a very brief summary of the things that have been going over the last three-plus years, and, as I alluded to earlier, we've really got some momentum, and I wouldn't say super recently, because, obviously, very recently, the whole world has kind of gone upside-down, but, over the course of the last year especially, we've really gotten some great buy-in and some great opportunities.

I think, with the Caribbean ecosystem status report, I think that that's just fantastic, that that's coming out around the same time, that we're going to be able to share ideas and share data and share analyses. We have a lot of interested folks, both at NOAA and at the council.

Once we started doing these outreach events, I mean, or just conceptual model building with different local stakeholders, there has become a real invigorated sense of buy-in, and I think that this is a great opportunity for not only this group here, but also for the council and for the region. I think that, if we can capitalize on what's going on right now, I think we're in line for a really great product.

Again, I'm sorry for all the technical difficulties, and any digging-deeper questions should probably go -- I am happy to kind of help people and talk to people, but I think that the reports are very informative, if anybody wants to dig further,

but, if there's anything else, I am happy to take questions.

JUAN CRUZ-MOTTA: More than a question, but it's to take the opportunity of your presentation to make a few comments. The first comment that I want to make is I keep forgetting to mention to everybody that Ori played a fundamental role in getting the Lenfest project. He and Bill really helped a lot to come up with the project as it is now, for reasons that I will never understand, and Ori -- Because he's from Pew, he couldn't explicitly be part of this proposal, but I just wanted to mention that, that Ori played an important role in us getting that funding. Thanks a lot, Ori.

ORIAN TZADIK: Thank you, J.J.

JUAN CRUZ-MOTTA: Also, I want to take the opportunity of this nice presentation to highlight the importance of analyzing our datasets using a multi-specific and multi-variate approach. I truly believe that, if we follow that path, that we will easily identify what would be the indicators appropriate for our reality.

Not only that, but we will also -- Very likely, we will discover that different indicators should be used depending on the specific island, or even the specific region of the island, where we are located.

Third, like Ori mentioned, we will be -- Hopefully, when we do all the QA/QC on the datasets that we are compiling, we will put those on the G-drive, but we will go further. Like, for example, with the SEAMAP data, we will share that with everybody, but we will also make it available to the GIS system at the council. Thank you, Ori.

ORIAN TZADIK: Thank you, J.J. Those are great comments, and I completely agree, and I want to mention that that was definitely one of the original ideas that we put forth, again back when Cindy was driving the project, to have some sort of interactive online platform, where stakeholders can tap in, and that was the idea behind putting a lot of these summary statistics together.

If a relatively interested, but uninformed stakeholder wanted to know about the CARICOOS data, for instance, it's better for -- If they are going to kind of click on that link towards the CARICOOS data, instead of just having whatever it would be, and let's say Microsoft Access files that just -- You have data readings every half-hour or whatever it is for the last several years.

Instead of just taking them straight to that, there's an intermediary step that it says that CARICOOS data at this location was collected from this year to this year, and these are the parameters that it collects, and, if you're interested, here is a very rough look at what they look like, and the dry season and wet season are different from each other.

I think that, to the uninformed stakeholder, that's a much easier path to go down than to click on a link and be bombarded with, okay, download all these files and try and navigate the world that is physical oceanography data.

ALIDA ORTIZ: Ori, I would like to make a question. You said that there is a report within a folder, and is that the one that Liajay has?

ORIAN TZADIK: There is two reports, and there should be actually three. There is three that I worked off of, and I will make sure to work with Liajay to make sure it's all available to us and which G-drive it's in, because I actually went back to the G-drive, the old G-drive, to get these reports, and so I don't know if they're in the current one, but I would have to find them, but they're just called like Faletti Final Report or something, or Brooks Final Report, and so I will work with Liajay to make sure that they're available though.

GRACIELA GARCIA-MOLINER: If I may, Liajay is putting together a timeline, as you did at the beginning, but with the actual reports, so that people don't have to go look at fifty different files, because that's one of the things that we found, that we kept everything in there, and so we need to remove all the draft and everything that were working documents, and so that she is working on.

It's just taking a while, because she's going through everything, to make sure the dates that were used and that the report coincides with the files that were used to produce that report, and so it's not only the report, but it's the background information that went into that report specifically.

ORIAN TZADIK: Okay. Great. Well, let me just offer Liajay my assistance, should you need anything, and just shoot me an email or give me a call.

LIAJAY RIVERA: Will do, Ori. Thank you.

BILL ARNOLD: Thank you, Ori. That was very nice. We're going

to move on to Kelly now, and I want to alert everybody that, unless there's a major objection, we're going to skip the afternoon break. Go ahead, Kelly.

ECOSYSTEM STATUS REPORT UPDATE (ESR) 242:48

KELLY MONTENERO: Thank you so much, and I wanted to thank the TAP and everyone here for giving us time to present. I really just wanted to reiterate that I appreciate this time this afternoon to give updates on all these different projects and get a chance to compare and contrast all of these different projects, just because I can understand that it could be kind of confusing with all these different efforts, and so it's nice that we all get a chance to kind of sort out in our minds where these fit together and where they are a little different.

Again, I wanted to introduce myself, and my name is Kelly Montenero, and I'm a NOAA affiliate, and I work at the University of Miami, but I'm a NOAA affiliate with AOML and the Southeast Fisheries Science Center, and I work with Dr. Mandy Karnauskas, who I believe you guys are all familiar with.

I just wanted to give this body an update on the Caribbean Ecosystem Status Report project. What is an ecosystem status report? There's a summary of it here for you, but these are products that provide information on past and future conditions of marine ecosystems based on suites of indicators, and so that's important, and we'll come back to that later.

This information is intended to provide a context for a range of decisions affecting marine ecosystems, and it's intended to support an ecosystem approach to marine resource management. I just wanted to make a note that this is a product that NOAA has used in a variety of ways, not only in regional management councils, and regional management areas as well, but also in NOAA National Marine Sanctuaries, and these products are also used internationally as well.

What is an ecosystem status report? This is my like one-sentence overview of it, to see if you can wrap your heads around it, but the goal is to summarize status and trends over time in a suite of vetted indicators, and these reports provide a broad overview of the current state of social, economic, ecological, and physical components of a marine ecosystem.

These graphs that you will see below are examples from previously-completed ESRs, which is our fun NOAA acronym for ecosystem status report. On the left is from the Gulf of Mexico

ESR, which was completed in 2017, and the cluster analysis of key forage species on the right is from the California Current ESR, which is updated every year.

How are these products used in management? You can see, in the Pacific Fisheries Management Council, they require a yearly ESR when looking at the California Current status and trends as an overall context for decision-making, and remember that these are not just ecological indicators, but social and economic and physical and ecological and biological as well.

In the North Pacific, they are used in management for single-species quotas to be set in the context of ecosystem information. It's the same effort that this body is doing in providing a context of ecosystems, and that's the role of the ESR as well.

Over in the Atlantic, the Mid-Atlantic Fishery Management Council's ESR links indicators to specific management objectives, and, in an effort to keep this short, since that I know that a lot of you on this call were present for the SSC meeting last week, I'm not going to click on these and show you, but just know that, in the presentation folder that Graciela and Liajay have provided, this presentation is in there, and all of these graphs and images are hyperlinked, so that you can learn more about how ESRs are used in management.

All right, and so what is our process for the Caribbean ESR? The goal here is to build off of previous efforts, to build off of fishery management plans, to select indicators, calculate status and trends, and then produce this actual report, and so this is kind of like a choose-your-own-adventure route.

We start with the fishery management plan draft objectives, and so it's been really nice for me to listen in on this process this morning and talking about updating the goals of it, and then compile a list of all of these draft fishery objectives, and then, building on the information from the conceptual models that were made by the SSC, and, obviously, the drafts that were from last week and the individual island group conceptual models, coming up with a list of draft indicators from that.

If those draft indicators map directly to a draft fishery objective, that will be our selection of indicators, and then, from that, we will calculate status and trends in a spatial and temporal way to produce an ecosystem status report, and that's a pretty straightforward route.

If it's not a straight one-to-one mapping of conceptual model draft indicator ideas and our fishery objectives from the fishery management plan, then I sorted them by topic, and we'll use a tool called a decision matrix in expert working groups to create a candidate list of indicators.

We are building off of the conceptual models, which has been really great to hear about those efforts before my presentation, for sure, and as a starting point, but we're not limited just to those, in that we're just trying to pull together interdisciplinary efforts from NOAA and from other academic and agency efforts as well, and so, from this, we'll have a candidate list of indicators.

Using that decision matrix tool, we will do indicator scoring to create a vetted best-fit list of indicators, based on pre-selected indicator criteria, and we've done this process already for the Florida Keys, and so that gives us a little bit of a background on this can work for indicator selection and having this suite of indicators that can be used by other projects as well.

From that, when we say calculate indicators, we mean, again, looking at the status and trends and creating those graphs that we've seen from other ESRs and compiling an ecosystem status report. That's what we're thinking for this project is our process, just to be as transparent as possible.

I talked about our selection of indicator criteria, and this is what we're thinking, but I would love to have feedback, even in a chat at the end of this presentation, or, if you want to mull it over, you can email me later, maybe at the end of this meeting this week as well, but our criteria is that, obviously, we need long-term data availability.

For us to do those analyses that you saw before, we need to have continuous data monitoring of the indicators, so that we can show changes in status and trends. Indicators, obviously, need to be measurable, so that we can show these changes, and they need to be sensitive to environmental changes, and they need to be specific, have spatial and temporal scalability, and they need to be relevant to the FMP objectives, to have this be something that can be used by management, and, finally, they have to be something that can be responsive to management action, again, to make it as useful to managers as possible.

Without getting too into it, and I know this is pretty small, this is our general timeline for the project. It's a two-year

timeline, but you'll see that we've got some wiggle room in our twenty-four-month overlay. It started in February, with me becoming the contractor on the project, and I already was a NOAA affiliate at AOML, and part of the Integrated Ecosystem Assessment Program of NOAA, but now I'm dedicating 50 percent of my time to this Caribbean ESR project, via the Southeast Fisheries Science Center.

A couple of things that you guys can look at and be aware of is I wanted to draft all these different materials together, and so thank you so much to those of you who have spoken to me before, to make sure that we're all on the same page, to make sure that I have a good grasp of the status of these different projects, so that we can dovetail and be synergistic, rather than repetitive, on these projects, which I really appreciate.

I presented this project to the SSC last week, and I'm presenting to the TAP right now, and that's the item that started in the fifth month, or May, and we started last week, and my follow-up for this will be requesting input on potential indicators to be included, and then -- I've got a slide on this later too, but I just wanted to give you guys a heads-up that I may be requesting expert input for a decision matrix for selecting the top indicators, per our components and per our objectives.

I will be working with data collection, which, again, is a synergistic effort, with the Lenfest and Pew efforts, as well as the NOAA efforts, such as SEDAR and things like that. I will be writing the report early next year, and some of the outcomes of this will be a data collection library that is formatted, presentations to management bodies, and adaptations of projects, including maybe MSE tradeoffs, spatial analysis, et cetera, following feedback from the council and management bodies on what would be useful, so that we can make a plan for the longevity of reports such as this, pending funding, of course, but we might as well plan on it.

I just wanted to make sure you guys were aware of our general timeline on this, and it's moving, and we're going to get it done within a year-and-a-half, which is great.

I have already mentioned this, but we've got linkages to other ongoing efforts, and I have really, really appreciated everyone's time in getting me up to speed on these other ongoing efforts, and so, again, thank you so much for that. We've heard about some of the other efforts, and I just wanted to highlight here the conceptual models are a starting point, or a

jumping-off point, for coming up with components of the system and a jumping-off point to guide indicator selection.

Again, the ESR is a synthesis and visualization of the data that's mostly already been compiled through other efforts, but I am adding to that and data mining through new data collection efforts that have been either suggested to me by various experts, including some of you on this call, and so thank you for that, and building off of already occurring data compilation, including the EBFM Working Group, SEDAR, SEFSC data and other NOAA data, other academic groups, and, as J.J. mentioned, the Lenfest work. We have been trying to cooperate and be synergistic, and I was happy to be able to use the qualitative draft conceptual models as a starting point for our indicator selection.

Finally, our ESR project is going to identify indicators that match with management objectives, analyze status and trends in a timeline sense, and we'll produce a report within the two-year project timeline. We've already heard about Lenfest, which is great, and so I don't need to go over that too much, but they will be working on modeling of relationships, which I think is a really nice complement to this ESR project.

Both of these efforts can result in spinoff projects for continued evaluation and management applications, and we both plan on building on previous efforts for ecosystem-based management.

I mentioned that I wanted this to be as useful as possible to management, and how we envision the ESR being used, based on how it's been used in other regions, is allow managers to understand whether management objectives are being met.

The ESR will give a broader ecosystem context, including those components for decision-making, and one of our other goals is to understand impacts of major acute stressors, such as coral bleaching disease events, hurricanes, and interruptions, such as COVID-19, which we're, obviously, all experiencing delays and impacts from currently.

Questions for you guys, and I don't want to take up too much of your time, and so either responding verbally now, in the chat box, or emailing me would be all great options, but feedback on the use of these objectives that are being hashed out right now, feedback on the use of the conceptual models, and then feedback on the process. Does it make sense?

I am giving you, again, a heads-up that I might request that you provide potential indicator feedback along the way, so that this isn't blindsiding anyone, and you may be tapped to use a decision matrix to select the best indicators for a specific component within your field.

Then, finally, feedback on useful variables for measuring impacts of events, and you don't have to answer me now, but these are just some ideas that we've had, but, if you have thoughts that would add to our list of potential indicators, I would be very happy to hear it. With that, I just wanted to say, again, thank you so much for your time. Here is my email address and Dr. Mandy Karneuskas' email address, and we're just really excited to do this project and have it dovetail with other ongoing efforts that this body and other projects are undergoing.

If you are interested, again, and this is in the folder that Graciela has made of the presentations, here's an example of what I mean by a decision matrix, and this was the method that we used in the Florida Keys to quantify expert opinion, to make sure that everyone's voices are heard, and, especially in times like this, when we can't all physically be together, a way to kind of just gather input and make sure that everyone is contributing, even if their internet goes out or they're not able to participate for some reason or another.

With that, I've got some more extra slides just in case, but I wanted to open it up for any feedback that you guys might have or questions that you guys might have for me before I get into anything else.

BILL ARNOLD: It looks like Ori has a question.

ORIAN TZADIK: My question is, and I think it may be answered actually on this slide that you're showing, but are you willing to kind of bend the rules a little bit in the Caribbean, given the different datasets that we have compared to other regions?

KELLY MONTENERO: Of course. Obviously, we have different availability of data in every region, and our criteria are not like a black-and-white thing. As you can see on the slide, and I don't know how the colors are coming out for you guys, but, for me, the green bar, where it says our criteria weight, that's where experts can individually manipulate which criteria they want to weight more or less, and so it's not going to be like a full yes or no for a proposed indicator if it doesn't perfectly meet every single decision criteria.

ORIAN TZADIK: Right.

KELLY MONTENERO: This is our example from the Keys, and so, again, it's slightly different criteria for the Caribbean that I had shared with you earlier, but, even if these are calculated overall -- You will drop this little arrow down and score it a zero, one, three, or nine, and then it multiplies with the weight that you assigned as an expert for each criteria, and so the scores are a combination of that, and it's like a black-or-white line.

ORIAN TZADIK: Got it. Okay.

KELLY MONTENERO: It definitely -- I'm going to go back to our criteria, and we're definitely willing to be flexible on it, but that's kind of the beauty of the decision matrix, is that it allows the experts to have more of a voice in what criteria are more important, allowing flexibility already in the scoring, but, of course, we're not going to go straight by scoring and not ask you guys' feedback.

I want to make sure that I'm running by things and vetting it with our experts and management bodies, and advisory councils as well, to make sure that what we're doing makes sense before we just charge ahead and are like, here you go, and you have to use this.

ORIAN TZADIK: Okay. Great. Thank you.

KELLY MONTENERO: Thanks, Ori. Does anybody else have feedback on the criteria or on the process?

STACEY WILLIAMS: Kelly, I have just one question, and maybe you mentioned it, but the conceptual models, and so who is going to be involved in the conceptual models, and when do you think those will be -- Like when will the workshops be taking place?

KELLY MONTENERO: Sorry, but I probably did not clarify that enough. These are not new conceptual models. These are building on the conceptual model efforts that have already happened, and I'm not going to make you guys do more conceptual models, and, like I said, that's our jumping-off point, and so I want to thank you guys for the conceptual models that have been done by island group and also thank members of the SSC for their tireless work last week in better defining the SSC's conceptual model, and so that's our jumping-off point.

We had hoped to have in-person expert working groups, but, unfortunately, travel is not possible right now, and so our expert working groups will all be virtual, and we're hoping to not take up more time than necessary, but we're hoping for that all to be email correspondence. Does that make sense, Stacey?

STACEY WILLIAMS: Yes.

KELLY MONTENERO: Okay. Thank you so much. Does anyone else have feedback on the idea of having the SSC and TAP provide potential indicators, and would you be willing to use a decision matrix to select the indicator suite? I'm not going to like write down your names or anything right now, but would that be something that you guys would be willing to participate in?

BILL ARNOLD: I will comment on that, Kelly. The conceptual model development process, and this is something that everybody needs to keep in mind, is timelines are always going to be tricky on this. We've got a Lenfest proposal, and it has a timeline.

We have an ESR project underway, and it has a separate timeline, and the council has timelines, and the SSC has timelines, and it's going to be tricky and difficult to align the timelines, and hopefully we'll be able to go out and get more funding to keep this going, but it's always pay attention to the timelines and understand how they may influence, and potentially complicate, the individual project or sub-project goals, and so we want to be careful about that, and it's just going to be necessary.

Regarding using the SSC and the TAP for potential indicators, well, we could have the DAP conceptual models, and we could have the SSC conceptual model, but we not have all of the conceptual models, and we may not have stacked the conceptual models to derive one overarching model from which we would pull our final indicators, but my thinking on that would be that even the ecosystem status report -- If you don't have what's final, it's going to be sort of a, quote, unquote, living document too, in that it changes and adapts as we move forward and as the ecosystem undergoes changes, and so I hope that helps with Bullet 2, but I'm curious as to your thoughts, if you want to provide them.

KELLY MONTENERO: Exactly, and I'm glad that you brought that up, because, obviously, we all have different timelines, but I like the way you phrased it, and it's intended to be a living document, again pending funding, of course, but with a goal of

continuing this effort, and so, with that thought, I'm hoping that we can use the draft objectives and draft conceptual models, because it's better than starting from scratch and not building off of these previous efforts, but I like the way that you phrased it, Bill, and I definitely agree.

BILL ARNOLD: Regarding your expert working groups, I think we might need a little more guidance on that, and I think, also, that we might want to make sure that we, and this is up to you, but have broad representation, including potentially at least a member or somebody from each of the DAPs or whatever. You want to have that island-level input, and I think that my comment here is very preliminary, and I just kind of wanted to get it out there.

KELLY MONTENERO: Exactly. I appreciate that as well, and that's definitely my intention, to have members included in the different groups, and from the TAP as well, and I will follow this meeting up with an email with more explicit requests, I guess, for different working groups and explanations of what it is that we're looking for and what you would have to do, but I wanted to make sure that this body was informed about the effort before we jumped straight into it.

BILL ARNOLD: Yes. So Bullet 1, Kelly, it wouldn't be FMP objectives, I don't think. I think, now that you have been on this meeting, you would know that it would be FEP objectives, as we develop them, but certainly we would support the use of these FEP objectives and the conceptual models in your ecosystem status report preparation. In fact, we would be disappointed if you didn't do that.

KELLY MONTENERO: That's what I figured too, and I'm so happy that this is all going on all at the same time, so that we're not having to reinvent the wheel every time. Then, finally, does anyone have any immediate feedback on useful variables to measure impacts of events? This is me just trying to be a little greedy and get feedback while you guys are all on the call, but feel free to email me later, if you want a chance to think about it.

BILL ARNOLD: Let's give them a chance to think about it, Kelly.

KELLY MONTENERO: That sounds fair.

BILL ARNOLD: If you're going to send that email out to us, include that question in there, and that will be good.

KELLY MONTENERO: Absolutely. That's a good idea. All right. Thank you so much, everyone, and I look forward to continuing to discuss this project with you and give updates, as available, and make progress.

BILL ARNOLD: Thank you, Kelly, and thank you, Mandy, both of you, for being willing to be involved in the work you're doing, and so let's move on to Rich and his report-out of the SSC meeting, if Rich is ready.

JOCELYN D'AMBROSIO: Bill, would it be all right if I made a comment at this point?

BILL ARNOLD: Of course.

JOCELYN D'AMBROSIO: Okay. Thank you. Now that we've heard about some of these similar efforts and similar work that's going on, I just wanted to take a moment just, again, to note the importance of keeping track of sort of what each of those groups are doing and what they aren't doing.

This group, as the Technical Advisory Panel to the council, was formed by the council, and so it's a council entity that has to follow certain federal requirements in the Magnuson Act and otherwise, including noticing its meetings and things of that nature, and then it is providing recommendations to the council for ecosystem management, and it also is working sort of in concert with the SSC, which is the council's scientific advisory body, and so the scientific advice flows through the SSC, and so anything that this does, to the extent that it needs scientific advice, it would need to be further run through the SSC and approved by the SSC and then gone to the council.

That's what this group is doing, and it can -- However we want to understand the ecosystem, or however this group wants to put together that information for the council in its fishery ecosystem plan, they can rely on what these other groups are doing, or it cannot, but it just needs to be really clear who is doing what for which purpose.

If it's going to the council and going to inform management, it needs to be coming from this Technical Advisory Panel and the council's Scientific and Statistical Committee, and I think we need to make sure that we're continuing to keep that in mind, because, when we talk about forming sub-groups or interviewing persons, it's very important that we know if it's a council initiative, because there is all these extra process layers when it's happening from the council.

I know there's a lot of people working across different projects, and I think that's great, and the information sharing is great, but, at all points, it needs to be really super clear like who you are, what project you're working on, and what the end goal of that is, and, if the end goal is, again, council management, it needs to be through the TAP and the SSC.

If it's just work that you're doing that you hope informs it, you can give it to those decision makers via this body, and via the SSC, and then inform that, or you can present directly to the council, at a council meeting, but, if it's the council's activity, and so you're doing it on behalf of the council, we need to be really clear about that, so we can follow those procedural points.

BILL ARNOLD: Well taken. I think we're doing pretty good with that, Jocelyn, but maybe not, because, for example, the ecosystem system report is a Science Center activity, separately funded, and the Lenfest is, similarly, an almost private effort, separately funded, and they're bringing their information to the TAP, but, when you get right down to it, they don't have to.

There is no obligation for them to come to us, and certainly no legal obligation, but we would assume that this is where their information to go to be most effectively used, but how does that influence what you're saying here?

JOCELYN D'AMBROSIO: Right. Just like the Lenfest folks are doing independent work, they don't have to come to the TAP directly, and vice versa. The TAP doesn't have to rely on that work, but, since there is overlapping goals, then it's good to work together. I think we just want to be clear about in what capacity you're working, because we have some of the same persons working on the Lenfest grant or working here, just so that we're clear.

I heard talking about forming -- That if persons want to be involved in informing the ESR, and that is certainly within the Science Center and others purview to say who are we going to loop into that process, but I just want to make it clear that this is coming from the strategic review, and that's that process, because, once it starts coming from the council, we then have to have public meetings, like we're doing now, and so that's just where I want to keep it clear.

If Lenfest is doing interviews with the public, and that's for its research, then that's fine, but, if this group wanted to do

interviews with the public, then we have an additional process, and so that's why I'm saying, now that we've heard a little bit more about these other processes, I think that's great, but we just want to keep in mind what are they doing and how do they inform this, if at all, because, if it's something that you wanted to do directly as a TAP, there would be an additional process.

BILL ARNOLD: Keep in mind also that, while the ESR preparation and the Lenfest project -- That we're working pretty closely with them, but there could be other groups out there, even groups we're not aware of who are doing things, but, down the line, we may become aware of them and be using their data and their outputs, but, of course, we would have no direct control over what they're doing, but, when we started using their information, we would be using that to make recommendations as an advisory panel, and we would be doing that to advise the council, and we wouldn't be making decisions ourselves, if that makes sense to you.

JOCELYN D'AMBROSIO: Yes, absolutely. Like you're just using it as a resource to help inform what you're telling the council, and, like I said, the council could also say, all right, well, we also would like to get that presentation, and so we're inviting the Lenfest PIs, in their capacity as Lenfest PIs, to present to us, for example. If we're just making sure that we're thinking about the hat we're wearing when we're acting in different capacities, I think would just be really super helpful.

ALIDA ORTIZ: I have a question for Jocelyn. Jocelyn, does it mean that any questionnaire that we'll be developing for stakeholders, whether it is in coordination with the Lenfest or whether it's coordination with the Outreach and Education Advisory Panel has to go first to the legal section before I present it to the council?

JOCELYN D'AMBROSIO: I think, if you're trying to collect information, we would have to just chat about that and see which entity is trying to collect the information, because I want to make sure that I look into the different laws on that, because there's different requirements for the federal government, and then I would have to see what, if anything, applies to the council bodies, and so maybe we could talk about that offline, just so I can get a little bit more understanding of those information collection efforts and who is doing it and who is going to use it.

ALIDA ORTIZ: Okay. Thank you so much.

JOCELYN D'AMBROSIO: Thank you.

BILL ARNOLD: Okay. I would like to move on to Richard, if he's ready to go.

GRACIELA GARCIA-MOLINER: Bill, you have a -- Mandy wants to say something, and I think it's related to this, but I don't know. Let's hear it from her.

BILL ARNOLD: All right. In the meantime, get Richard ready to go. If you want to type it in, Mandy, and we'll read it out, unless it's too much, which I understand. Go ahead, Richard.

SSC REPORT (278:06)

RICHARD APPELDOORN: As people have already mentioned, we had four days of meeting on the conceptual model a week ago, and I am going to save you from having to listen to all those four days again, and this is going to be very brief, not the least of which reasons is my computer died, and so I have cobbled something together on a borrowed computer and am presenting this on my iPad, and so it's just going to be a few slides to give you kind of a summary of where we are and where we had gotten to in that week.

I would mention that it's a complicated model, and we have eight sub-models, and the sub-models have variable numbers of components, and I have listed them here, and these vary from sixteen components under the competing use of resources sub-model, and down to just five in the habitat model, sub-model, and we have sort of done a hybrid of things over the various meetings, but, the last one, we really got down to trying to just look at the connections and finish the connections within the sub-models.

Some of these are complex, and some of them not so much. Like the abiotic factors, which has nine components in there, is sort of a catchall sub-model for things that are from the natural environment that will affect things through the system, but it may not necessarily have connections between them, and so that's one of the simpler ones.

The socioeconomic and cultural drivers and the competing use of resources and land-based uses all get fairly complicated, and fishing is the core one that we are trying to link everything into.

Just to give you an example, this is the marine ecosystem components sub-model, and it's trying to -- Disregard the circle on the left. That just was in the slide that I had a copy of, and the idea here, of course, is that, for these various components, they are all linked in, and we were trying to come up with not only the major components of the system, and so looking at the reef fish fisheries, which includes the invertebrates as kind of the core of where we were going, but we also wanted to include other components that feed into that that are also things that the council needs to worry about, and so turtles and manatees and cetaceans are all things that are protected species in NOAA, and we have to be considerate of those.

We have things like coastal pelagics and highly migratory species that also potentially feed in here, although, as we have learned, we have to kind of go back and look at some of these definitions, because highly migratory species contain some things that are distinctly not highly migratory, like nurse sharks, and so our functional definitions need to be tweaked and see if we're going to hold to strict definitions or we're going to go with ecological definitions, and there will be some mismatch between that and what legally might be considered say a highly migratory species.

In this diagram, the blue colors are all positive relationships, and the reds are all negative, or at least that's the theory in the diagram, and this all relates back to a matrix, and you can see we score the strengths between a score of one and three, and there's a positive or negative sign, depending on whether something is positively or negatively correlated with the change in one factor to another.

This is the actual spreadsheet of scoring strengths and directions for that figure, and I am actually not sure, since I don't have access to my computer, whether that's where we started or that's where we ended with the ecosystem components, but you can see here that it's a bit of a work, and you have to go through every row and figure out which column is interacting with it and which way.

We found out, for quite a number of things, important things, that the relationships were probably not linear, and that is to say, at some point, you get positive feedback from something, but, if you go beyond that, it starts becoming a negative factor, and so we're not sure exactly how to handle those at the moment, but it is a work in progress.

This is what it looks like in the Mental Modeler view. Now, this is the current version, as I understand it, and it looks a little simpler, because some of the lines are on top of each other, and like infectious diseases affects both manatees and turtles, but you don't see separate lines for that, and one is laid on top of the other. Again, blue is positive, and the reds are negatives, but the strengths of the relationships is not depicted here, as far as I know.

We have gone through almost all the sub-models. We were kind of a third of the way through the last one, which was competing uses, and it's a complicated one, and so we didn't quite make it through that one, and there was some tweaking going on along the way that we would say, okay, in here, this has really got to go someplace else, and we'll fix it later, and so we haven't gotten through those stages yet either.

Along the way, we had some really, and I want to stress really, excellent input from some of the members, and I am going to say particularly Vance Vicente and Reni Garcia. This is an example from Vance's stuff, and this is actually out of a publication that he did some time ago, where he really went into detail on the factors that are affecting turbidity and where it's coming from, and that is to say the upland sources or coastal sources, what are the causes or the activities associated with those in those different areas, what problems do they lead to, in terms of water quality, and so runoff, nutrients, et cetera, and how they eventually increase turbidity, and then what factors, or what strengths -- How does this multiply through, in this case, our sub-models to affect eventually the productivity of the system?

The next slide shows a simplification of that, where you can break it just down into four types of inputs, your allochthonous and autochthonous sediments, your nutrients, and colored dissolved organic matter, or gelbstoff.

These come in, and, again, they affect turbidity, or water transparency, in different ways, and then that turbidity is multiplied down through its effect on photosynthesis, and eventually through the benthic essential fish habitat, because much of the shallow-water reef fish ecosystem is based on benthic productivity, primary productivity.

These are the kinds of things that we have not incorporated, because we were just working say on the sub-model that dealt with turbidity and the things that might be affecting that, but

these will give us some really good ways to take that water quality sub-model and feed it back, or bring into it, if you will, the factors that are affecting these sediment sources and nutrient sources, et cetera.

Now, I don't have an example from Reni's presentation, but he did something sort of similar, but he went after it from an agency approach, or a data-availability approach, where is the data that will allow us to actually look at some of these factors, and so he took -- He was also working on some aspects of water quality and also other inputs from agencies and things like that and saying, okay, what are the data sources that we have available, how are these feeding into the system, and so this will allow us to then take that and move backwards from say our water quality model or our habitat models and go back and say, okay, where are these things coming from, and, eventually, what are the agencies and which boxes are those agencies in that we need to connect things.

This is something that's coming, and we haven't used these models and the details they presented, but it is going to guide our near-future work, and I think there is maybe one more slide.

This is an early vision of the model from 2019, and you can see that it spans from the upper-left, the social dimensions, down to the lower-right is more the natural dimensions, and it's all going into fishing, which you can see in the top center.

This particular diagram was not looking at any of the connections between or within sub-models, and they were looking at connections among sub-models, or between individual sub-models, which is a process that we were sort of getting into as we were dealing with sub-models, and then we stopped doing that, and so this is certainly not nearly all the types of connections between the sub-models that would occur, although we are going to have sort of a coordinating webinar discussion to do homework assignments.

I think the way we are going to go is something that J.J. had suggested in the meeting, which would be to not look directly at all these connections from one sub-model to another, but actually just look at the connections from the global heading of one sub-model to another, to greatly simplify it, and then identify, if you will, say the top three factors that are really driving those connections within each sub-model to the other sub-models.

We're going to have that discussion and outline where we're

going on Wednesday, and so I'm being vague, because I really don't know what that's going to look like in its final step, but that's what we're kind of going to try and do, to get say a workable conceptual model in the hands of the TAP while we continue to actually finish all these fine-scale connections.

I think that shortened version that we're trying to get into the hands of the TAP will also greatly facilitate us doing island-specific models. This has really been a generic model that we're working on, although, just given the expertise in the committee, that generic model has leaned already heavily to Puerto Rico, and so our generic model may not need much modification to fit Puerto Rico, but it would for the two other island platforms. That's it. If there's questions, I can try to answer. If not, back to Bill.

BILL ARNOLD: Thank you, Richard. That was very nicely done, and it's very important work that I can't wait to attend the next meeting and see how it goes forward. If the DAPs, any of the DAPs, want to talk about their conceptual models, but, otherwise, we'll move on to Alida. I think the only one I see on here is Nelson. Go ahead, Graciela.

GRACIELA GARCIA-MOLINER: Let me give you a quick update, and so we don't have to put any slides up, but Puerto Rico and St. Croix, as Ori said earlier, they are almost finalized. There are some fine-tuning questions that we probably have to put to them, because, once you do the model and you get the strength of the connections, there is some fine-tuning that has to be done, especially when you're changing to an analysis software type of thing, and so we're working on that, and we're working on the set of questions that need to be put to them.

Then St. Thomas has had the regulatory agency meeting postponed twice, but we have it in the agenda, and hopefully -- Because that was their main concern, their main driving force, for the model. It had to do with the regulatory agencies, the Department of Agriculture and the Waste Management Authority, et cetera, and so we have an agenda developed for that meeting, and we're just waiting to see when that's going to happen, and so that's the update for the DAPs. Thank you.

BILL ARNOLD: Thank you, Graciela. Alida, you're up.

O&E AP STAKEHOLDER STRATEGY (293:18)

ALIDA ORTIZ: Okay. We will be working with a stakeholder strategy, and this is something that I sort of got as an

assignment in the last meeting of the group in St. Petersburg last year, and I think it was June of 2019, but then, after that, everything changed, and so the only thing that I have done with this information is I gave it to Maria del Mar, and she was going to go to NOAA to a meeting, and she used it, and so she can have comments on it, also.

We have to work with the stakeholders, and that is something that sometimes worries me a lot, because we have to make a connection with them, and we have to communicate with them, and not all of the stakeholders can be approached in the same way at the same time with the same information, and so who are our stakeholders?

I believe that fishers in the communities and these people engaged with fishing in the region, and so we have commercial and recreational and sport fishers, and, even in Puerto Rico, we have people that fish informally from the coastline, and so these are part, but also the communities where they live and the communities where they develop their work.

The consumers, and, the consumers, we are talking about all the people from the country, from the city, from wherever they come, that they buy the product, and they use the product, and they demand a relationship with the fishers that are giving the product, and so as fishmongers and enterprises and restaurants and roadside vendors, and that's a very, very wide array of people.

We also have tourism, and tourism is not only the tourism that goes to the hotel, but when we have, like in Puerto Rico, areas in Cabo Rojo and Fajardo where, at some times of the year, the tourism is probably the most important economic activity, and it has a lot to do with the fact that they go there to go to the restaurants and to be somewhere around the fishing villages. It's the same thing with St. Thomas and St. John and St. Croix.

We have also management entities, and the management entities we have been talking about levels of government, different levels. In Puerto Rico, it is very important that we deal with the municipalities that are coastal municipalities and that they have a lot to do with the fishing, or with the fishers, because that's one of the most important economic activities in the area.

We also have state agencies, and we have federal agencies. In federal agencies, sometimes we think only about the National Marine Fisheries Service or NOAA, but, also, we have Fish and

Wildlife, and we have EPA, and we have the geological service that has to do with the rivers and the water quality and whatever comes from the mountains to the sea, and so it's a very, very open and very wide area.

It should be also the wider Caribbean, but, at this moment, we are not thinking about that, but we also get information -- We get it from OSPESCA or the international Caribbean.

Scientists and academics, and scientists are the people involved in research, but we think that it should not be the people related to the SSC, because the information they have and the opinion they have and whatever they would add probably is already included in the discussions that they had at the SSC, but then we have many marine biologists in different areas in Puerto Rico, especially at the university levels, that do some connection with the universities or with the fishing activity, and those are the people that I think should be put into the scientists and the academics.

When we are talking about academics, I am not thinking only of marine biologists or fisheries biologists, but we need a lot of people from anthropology and socioeconomics and everything, planning, and there is a lot being done about marine spatial planning that we need to include the information that they might give to whatever we're going to be doing with the fishery ecosystem plan.

Then we have the NGOs, and the NGOs -- At the beginning, we have been working with Pew, and we had some meetings very, very early in this process with the council staff, and it was agreed that the council would take care, and that's what I am doing at the Outreach and Education Advisory Panel, that we will take care of the fishers and the government agencies, and Pew will work with everything else outside of the government area. We have not gone back to that, but that's something that we have to take into account.

Then there are other NGOs. Like we have a lot of information from the behavior or what people do on the beach and where do they eat, what do they eat, what do they do, and how whatever activity they have on the beach may affect the waters that eventually will impact also the fishing areas.

Especially we have also -- We are going to work with the manatees and the turtles, and, in the SSC, they were, in part of the marine ecosystems, included as one of the areas of interest, and then we have the educators, and that is not only the formal

curricula and science and social studies and all this type of thing, but it's also the informal education that we have in the areas where we have marine protected areas or where we have the estuarine research reserves that do have to -- They do relate with the fishers at some times.

To me, this is very important, because the number and variety of stakeholders to be approached will vary within each island, and not even within each island, but, especially in Puerto Rico, it's very different, in terms of fishers, if you go to the western part of the island, or if you go to the east or the north or the south. The same way that some of the fish species are different, the historical and social conditions and history of these communities is also very different.

We also need to have some entities that may serve the interests of Puerto Rico and St. Thomas and St. John and St. Croix, and they will present information and recommendations for all of them, and so it is not only spaces that take care of one island, but they also take care of all the issues in the different islands.

Others will address the issues that are specific for each island. If you go to St. Croix, they speak only about what happens in St. Croix. When you go to St. Thomas/St. John, it's only what happens there, and, in Puerto Rico, it depends on where you go, and you will get information from Cabo Rojo or from Fajardo, and it might be very, very different.

The stakeholder engagement rules should be transparent and should be open, so that, whatever we want to find out by addressing that stakeholder is clear, and we have to be timely, because many times we think that probably a conversation of a half-hour will be enough, but probably it will have to be the whole day or more time in a village to find out what they do and how they do it and whether they want to share any information.

It has to be inclusive, and so all relevant stakeholders should be aware of the work that we are doing, and they should be able to contribute to its success and feel empowered, and the engagement will be a dialogue and not a one-way information feed. It is not just answer the question, but it will take much longer than just getting an answer from a person.

We have to be appropriate, because not all stakeholders are willing or available to go to a workshop or to attend a meeting. Probably we will have to go to the communities, or we can attend another activity that they already have in place, and then we

can integrate our people in the public, and then we can get information from them.

It has to be accessible, so that we will provide clear and timely accessible and comprehensive information to those stakeholders, and so, before we get there, we have to have very clear what do we want to ask, what are we going to use, or what type of information is going to be used, and that's why I was asking before, Jocelyn, about how to go about giving formality to these questionnaires.

It has to be balanced, so that we have participation and influence for most of the stakeholder groups, so that we don't have information going to one side or to the other, and so we will try to make it as wide and as spread as possible, and it has to be accountable, and so we will monitor the effectiveness of the stakeholder engagement, and we will recognize the contribution and ensure that they are aware of how we use their input to the project, and, in the next slide, I will give an idea of how we can do that.

Some of the strategies that I am recommending is we have to create a questionnaire, and I think that, at this moment, and from what I have heard from the DAPs and from the SSC and from this working group that we are working on right now, it has to be based on the DAPs and the SSC and those products, those conceptual mental maps from St. Croix, St. Thomas/St. John, and Puerto Rico.

These questions are to be included for discussion, and it will come out of the results from the DAP and SSC documents. This council FEP-TAP group should convene group meetings of municipal, state, and federal agencies and NGOs and the same thing that I spoke about before.

We have to facilitate some kind of meeting between people in Lenfest, and Tarsila and I have talked about this very little, and make it more formal, so that, if it possible for just one meeting with the stakeholders, to get the information that Tarsila needs for the Lenfest project, and it is the same as the place that we can get information for the FEP project, then that will be better, because then we don't have to call the same people for one Lenfest and another one for the FEP, and so we have to manage that.

We can also use internet surveys with the same questions, and they can be available through social media, and even those questionnaires have to be the same one, or in the same style,

the same questions, that we used in person, and make sure that the ones that we have in person don't answer that on the internet also.

To me, it is very important that the stakeholders may not be subjected to over-consultation, and the results may not be the ones expected for the FEP. We have to be very, very conscious of this before we select stakeholders and the activities that we are going to develop with them and the strategies, so that they don't say, but they came and asked the same thing, and what do I do with this now.

These stakeholders should get regular information as to the progress of the FEP, so that they can see the positive aspects of their contributions, and this can be accomplished by regular notes in the CFMC webpage and social media.

What do we have in process? I think we have to wait until the conceptual models are completed. To me, it is very important, especially the conceptual model from the SSC, because the DAPs I can recognize the information in that model is specific to every island, but the SSC is wider, and it's more comprehensive, and can we use only one, or do we have to use each one?

I don't know what is going to happen with the risk assessment and what shape that document, or that discussion, will have. Should we insert that into the conceptual models? Then we have to identify those stakeholders in Puerto Rico and St. Thomas and St. John and St. Croix who I have already a list, a general list, of agencies, and I am not putting names on those agencies, because that is very inconsistent. They might be here today, but probably two months after they will send another person, and so we have to identify the areas of interest in those agencies, and then we can identify people that can be the representative.

The same thing with the academic and research entities, the NGOs, and then there are other community entities, like the fisher associations. It's not the same thing to speak to a fisher, a single individual person, than to speak to the person that is charge of the entire work in the association, and so that's what we have in process up to now.

That's it, and so, after this, I would like to have comments from Tarsila, to see if we are moving in the same direction, to see if we can coordinate or integrate all this information or if some of this information is already in place, and so this is my presentation.

TARSILA SEARA: Alida, yes, I couldn't agree more. I think this is great, and I think there is so much here that would be really, really useful for what we're doing, and so I think we should certainly talk more about how we can collaborate, and, if there's anything that I can do to help with your efforts, I would be very happy to do that.

Like I said, we were focusing, in terms of the structure of the workshops, we were focusing mostly on the fishers, but, initially, we had talked about broadening the scope of the stakeholder conceptual model, and so, if what you're doing is going to involve the development of the conceptual models with these different stakeholders, that would be fantastic, if we could integrate that into the project as well.

ALIDA ORTIZ: As soon as we finish this meeting, I will make contact with you, and we will talk more about the strategy and how we can really make -- I see this like the first time it has been done, as far as I remember, from all the experience that I have in the area, of education especially, in marine education, but this will be the first time that we will have a project like this, at least in Puerto Rico, and I don't know about the other two islands, and so we will get in touch.

TARSILA SEARA: Sounds good. Thank you.

BILL ARNOLD: Any other questions regarding Alida's presentation? Otherwise, we will move on to Maria.

ISLAND-BASED CONSIDERATIONS UPDATE (314:09)

MARIA LOPEZ: The last slide that I wanted to present is where are we with the island-based FMPs. I am going to be very brief with this, and I just wanted to let you know where we are right now, and so the council submitted the island-based FMPs, each one of them, for secretarial review in December of 2019.

Now, the document is here within NMFS, and we are working to develop the proposed rule and associated documents. There is going to be two opportunities for comment. The first one is going to be the publication of the notice of availability, and that's going to include each one of the FMPs, and that will be published soon. I don't have a date yet, but we're working on that, and that's going to have a sixty-day comment period.

After that, the proposed rule is going to be published, and that's going to be a thirty-day comment period, and so this proposed rule will probably be published around -- I am going to

say at the end of NOA, when the NOA period, comment period, is going to be ending. In the meantime, the SERO Protected Resources Division is drafting a biological opinion that is evaluating the effects of each one of the island fisheries on the species that are listed under the Endangered Species Act, and this is something that takes a little bit of time, but we're making some progress.

After that, and after all the comment periods are done for the proposed rule, et cetera, there's going to be a publication of the final rule and what we call the cooling-off period, which is thirty days later, thirty days after the publication of the final rule, when the FMPs are implemented.

Now, the goal is to have the plans effective, implemented, so they can be applicable to the 2021 fishing season, and so that's the goal right now, and we're working on that, and, in the meantime, the council can discuss actions for potential amendments to each one of the island-based FMPs, and also continue working, of course, with the EBFM FEP development, hopefully to use some of that information, as available, for these amendments. I don't know if anybody has any questions.

BILL ARNOLD: Nice, Maria. Thank you. We needed that. If there are no questions, then we will move on to David Dale's discussion of essential fish habitat. Are you ready, David?

GINNY FAY: Bill, I'm here too, in case there are questions.

BILL ARNOLD: Great. Thanks, Ginny.

ESSENTIAL FISH HABITAT (317:10)

DAVID DALE: Good afternoon, everyone. Again, my name is David Dale, and I'm with the Southeast Region's Habitat Conservation Division, and you heard Ginny Fay announce herself, and she's our Assistant Regional Administrator, and I see, in the participants list, that we also have Pace Wilber attending virtually here, and he's the supervisor of our South Atlantic and Caribbean Branch.

If you're not familiar with the Habitat Conservation Division, we are one of the major offices and divisions in the Southeast Regional Office, along with the Sustainable Fisheries Division and the Protected Resources Division. Our role is largely to support the missions associated with those two divisions, providing a safe and reliable source of seafood and the recovery of protected resources.

The difference with our division is that we, for the most part, are not located -- We don't have most of our staff located in St. Petersburg, and we have a series of offices located throughout the region, which you can see there by yellow stars, including an office in St. Croix and an office in San Juan.

The stars in northwest and northeast Florida are greyed-out, and those are offices that we had staff in the past, and whether we'll get some sort of physical presence up in those areas remains to be seen, with budgets and the like, but you can see that we've got our staff aligned largely by council area jurisdiction, and so we have the Gulf of Mexico branch that is supervised out of Galveston, with offices in Baton Rouge and some folks in St. Petersburg, and then we have a South Atlantic branch that is supervised out of Charleston, with offices in Beaufort and West Palm Beach. The Caribbean is also supervised out of Charleston, but, again, we have offices in San Juan and St. Croix.

That is just kind of a layout of our staff, and we're kind of fortunate right now, and we're kind of rich in contractors, and I say six-plus-two because two of our contractors we're splitting with other divisions, one with the directorate and tracking large-scale infrastructure projects, and we're splitting one with the Sustainable Fisheries Division, but those are the players.

We've got eighteen FTEs, mostly fishery biologists. Again, we've got staff scattered across the region, kind of by workload, and you will see that Baton Rouge is heavily staffed, and that's largely because of the work that they do that is reimbursed under the Coastal Wetland Planning Protection and Restoration Act.

Then, on the far-right-hand side of the slide there, you see our folks that are important to the Caribbean, and Jose Rivera is a fish biologist in San Juan, and Ashley Ruffo is a contract biologist largely working for the Coral Reef Conservation Program, and she is in St. Croix.

Even though we're scattered throughout the Southeast Region, every once in a while, we're able to get together face-to-face. This was our last meeting at the Southeast Fisheries Science Center in Miami last year, and so there might be some familiar faces to some of you folks in that slide.

So what do we do? We've got four primary priorities in the

Habitat Conservation Division. We've got three of them listed there, and it looks like this slide didn't translate real well in Google presentation mode, but we've got three of them listed there. It's habitat conservation, habitat restoration partnerships, and the fourth one is kind of internal organizational excellence, but we really want to talk about these first three, because that's as it relates to our topic.

Habitat conservation, most of our habitat conservation efforts are centered around providing consultations to federal agencies, and our biggest customer is the U.S. Army Corps of Engineers, related to their Section 10 and Section 404 wetland and navigation permitting programs, as well as the civil works arm of the Corps of Engineers, doing major infrastructure and port navigation and beach restoration and shoreline protection work.

We perform consultations under a variety of statutes, including the Magnuson-Stevens Act; the Fish and Wildlife Coordination Act; the Clean Water Act; NEPA, which is the National Environmental Policy Act; the Federal Power Act; and the Deepwater Ports Act. There's a lot of statutes there, and I will talk a little bit more about the Magnuson Act and EFH in a little bit.

This is kind of the -- This is where fisheries links to things affecting our ecosystem that we don't regulate directly. One of the examples we always provide is the National Marine Fisheries Service has the ability to regulate where a fishing boat may anchor, but we're not able to directly regulate where other vessels can anchor, but there are other agencies that do have that authority, the Corps of Engineers and the Coast Guard, and so we use our authorities to consult with those agencies to try to protect and preserve habitat from a variety of activities, and I've got a couple of them listed there, the docks, piers, and wharfs, and these can be single-family or larger-scale projects.

Bulkheads, seawalls, ports of navigation, major infrastructure, and energy projects, and so coastal development activities that require a permit from the Corps of Engineers or other actions being undertaken or licensed or permitted in the coastal zone, and those agencies do consult with us.

I will briefly cover the other two priority areas. Habitat restoration, I don't know if the Restoration Center is going to present, but the Restoration Center does a lot of restoration activities, obviously, but they are not part of the Habitat Conservation Division, and the Habitat Conservation Division is

not part of the NOAA Restoration Center, but both of us are linked through the Office of Habitat Conservation up in Silver Spring.

When the Habitat Conservation Division is talking about habitat restoration, we're talking about things like addressing wetland and land loss in Louisiana, and that's why our Baton Rouge office has a lot of folks, because that program is funded and provides some reimbursement for our participation in it. The NOAA team is comprised of not only the Habitat Conservation Division, but also the Southeast Fisheries Science and the Restoration Center.

Then another important habitat restoration area for us is reestablishing fish passage across dams, either hydropower facilities or other dams and barriers. The Southeast Region has the second-most amount of dams and barriers blocking fish passage in the country, and so we deal with the Federal Energy Regulatory Commission, through the Federal Power Act, and we have the authority to prescribe passage for fish as these facilities are relicensed. Relicensing occurs once every thirty to forty to fifty years, and so it's an important opportunity for us to do that, when we have the opportunity.

I also have listed there the Gulf of Mexico restoration, and that's going to be a big deal as money from the Deepwater Horizon starts and continues to flow into the Gulf of Mexico.

At the bottom there, the partnerships, the third major priority, we really focus on those partnerships that further our mission, the Habitat Conservation Division's mission. We're not as active as we have been in the past, and possibly not as much as we would like to be, but I've got a couple listed there that have a presence in the Caribbean.

The Coral Reef Conservation Program, again, Ashley Ruffo is funded under that program, and, also, I identified the National Estuary Program, and San Juan Bay has an estuary program that is an EPA program, and we have participated in that as well.

Then I will go on to the next slide, and so essential fish habitat. The Magnuson Act was amended in 1996 to include essential fish habitat, and it requires that the National Marine Fisheries Service and fishery management councils identify and describe essential fish habitat and federal agencies that either undertake, license, permit, or perform activities that may adversely affect EFH and consult with the Fisheries Service.

Jocelyn, in her legal groundwork slide, right there after lunch, noted that identifying and describing EFH was the seventh in her list, and you can see the citation there to Section 303(a)(7). That is the requirement to identify and describe EFH and minimize the adverse effects of fishing on EFH and to encourage the conservation and enhancement of EFH.

In Section 305(b) of the Magnuson Act, that's where the National Marine Fisheries Service and the fishery management councils are directed to identify and describe essential fish habitat. In Section (b)(1) and (b)(2), it directs federal agencies to consult with the National Marine Fisheries Service regarding their activities affecting essential fish habitat.

Section (b)(3) says that the councils may also provide comments and recommendations to federal agencies, based on the effects of those actions, and so it's not just the National Marine Fisheries Service, but the councils have authority, under the Act, to provide comments back to federal agencies on those activities.

In Section (b)(4), it actually directs the National Marine Fisheries Service to provide EFH conservation recommendations when there are activities that are identified that will cause adverse effects on EFH.

The 1996 amendments directed us and the councils to do that, and we issued an interim final rule in 1998, and the reason we issued an interim final rule is that EFH was something new, and we didn't know if, once we took it out for a test drive, that we would operate it properly and correctly, or knew all about it, and so it took a couple years of operating under the EFH provisions, and then, in 2002, we modified the regulations and issued a final rule, and those are found at 50 CFR Part 600, and you see there that there is two sub-parts to those regulations.

The first is guidelines for identifying and describing EFH, and those are directions and guidance to National Marine Fisheries Service and the fishery management councils, and then Sub-Part K is the procedures for other federal agencies to consult with the National Marine Fisheries Service on their activities affecting EFH.

Again, as Jocelyn mentioned, there were I want to say thirteen or fifteen required components of fishery management plans, and identifying and describing EFH was Number 7 in that list, and, within the regulations, we identified ten components within the essential fish habitat regulations that need to be included in

fishery management plans, the first of which is that identification and description of essential fish habitat, and we do that for every major life stage of every species managed under the Magnuson-Stevens Act.

In doing so, that creates very broad identifications and descriptions of essential fish habitat, when you put that composite together. That part of the rule also requires that we provide mapping, and it talks about what data and what levels of data and information requirements.

There is nine other components here, and this all kind of relates to the ecosystem and managing the overall ecosystem, and so the second component there is fishing activities that may adversely impact EFH, and that would be Magnuson-regulated fishing activities.

Under the Magnuson Act, we're also directed to minimize the adverse effect of fishing activities to the maximum extent practicable, and so this is where we're looking at like the effects of trawls, traps, or bottom longlines on bottom habitats, just as an example.

Next, Number 3 would be non-Magnuson-Stevens-Act fishing activities. This would be your fishing that is prosecuted in state or, in the Caribbean's case, territorial waters. Number 4 is non-fishing-related activities that may adversely affect EFH, and this could include things like invasive species, climate change, as well as coastal and offshore development activities. Again, the fishery management plan must discuss these things and how they relate to potentially affecting essential fish habitat.

Number 5 is a cumulative impacts analysis, and Number 6 is conservation enhancement. What we have put in those sections is essentially things like project construction and design protocols, in the form of like best management practices or project design criteria, and those things are discussed.

Number 7 is prey species for each of the managed species must be identified. Number 8 is identification of habitat areas of particular concern, and this is a subset of essential fish habitat, and the criteria to be designated a habitat area of particular concern is that the habitat must either be ecologically important, sensitive to human disturbance, to what extent it might be affected by development activities, or if it's particularly rare.

Again, HAPCs, habitat areas of particular concern, are not

required, but the council can identify those areas, and, when those areas are identified, as we're undergoing the consultations with the federal agencies, we will pay a little bit more attention to those areas that are identified and described as HAPCs. Then the other two components are research and information needs, and there is a provision for the review and revision of EFH.

The original designations by the Caribbean Council were done in 1998, and the EFH provisions were passed in 1996. It took us a while to write the interim final rule, and, once the rule was in place, that told the councils how to identify and describe EFH, which they did.

The Caribbean Council was subject to a lawsuit that -- The Caribbean Council designations were subject to a lawsuit brought forth against the Department of Commerce, or National Marine Fisheries Service, and that required us to revise those, and we finished those revisions in 2004 and 2005, and so most of the EFH identifications and descriptions were completed then.

There was a couple of actions since then, related to like the Sustainable Fisheries Act, and so there was some additional species added to management around 2010 or so, and so there was some additional EFH identification descriptions done then, but our regulations require us, or urge us to, or actually require us, to review our EFH information every five years, and the Caribbean Council did that review following the 2004/2005 revisions.

The review was done in 2011/2012, and then, most recently, the latest review was in 2018, and I'm saying 2020, because things got disrupted, because of the hurricanes, and Graciela just shared the results of that with me recently, and so we're going to take a look at what the council reviewed, and we'll follow back to the council with some comments and recommendations on that review.

Essential fish habitat also needs to be identified and described for highly migratory species, which are managed under the Magnuson Act by National Marine Fisheries Service, and I just wanted to point out that those designations were done in 1999, and they reviewed and revised those, and the latest revision was in 2017, and so there are some EFH identification for HMS in the Caribbean area.

I think, with that, that's probably my last slide, and, again, I wanted to open up to any questions that folks might have, either

to me or Ginny, or I guess Pace is on the line, too.

GINNY FAY: If I may, one thing that we also do under Habitat Conservation, what we consider under Habitat Conservation, is we are active on council IPTs, and so, through the early development all the way through, we have members on the IPT advising on habitat issues and helping to identify data and other things that can inform the development of the FMP or amendment.

DAVID DALE: Thank you, Ginny. I had that in my notes, and I passed right over it.

GRACIELA GARCIA-MOLINER: May I ask a question? One of the things that almost everyone has identified that has been one of the stressors, and essential part, of the conceptual models has been things like coastal development. That is very specific to the work that you do regarding the permits that people require to do X, Y, and Z.

Part of the reason, really, is to have everyone at the table at the same time when we're developing these fishery ecosystem plans, because you have a lot of the data that comes in from the EIS and from the mitigation efforts, et cetera, that really needs to be brought out and put into this plan. I thank you for coming into the discussion, and I'm really looking forward to having some very specific questions presented to you from all the groups that are putting effort into developing the FEP.

GINNY FAY: Great. No problem, Graciela. We have been engaged, to a greater or lesser extent, depending on where the FEP is in its development, and so we're happy to answer questions.

BILL ARNOLD: The Habitat Division has been important to us all along when developing fishery management plan amendments, and very much so when developing the fishery management plans. As we go into an ecosystem approach, they're going to become just that much more important, as habitat takes center stage in a lot of ways, and so I'm very appreciative of David, specifically, and the habitat group in general, of taking the time to participate and attend, and they are very busy, and they have a lot of competing demands, but, to the extent that they're able, I welcome their participation, and we will look to them.

Taking that a step farther, all of the presentations that we've gone through this afternoon, I think that would further increase awareness of how complex the development of a really good fishery ecosystem plan that is actionable and can be used by the

council in a practical manner -- This is going to be a very complex process, and it's going to --

First, it's going to take a while just to get something in place that we can actually use, and then there's no endpoint to this, because it's going to be constant attention and adaptation to changing conditions, and hopefully increasing information, that allows us to better our ecosystem-based management, and hopefully we will be producing information and guidance that will better direct that information gap, and so thank you very much, David, and all of the presenters.

I find it very helpful, and I asked that we hold off -- I asked this morning that we hold off on any more discussion of the goals and objectives until we went through these, because I kind of felt like these presentations and the information contained within them may provide you with information you can use in suggesting goals, and particularly objectives, and so I do hope that they helped. They helped me a lot. I hope you guys, the TAP members and everybody else, feel the same way.

I am assuming there are no more questions for the habitat group, in which case we will move on to Topics 6 and 7, basin and regional considerations, and we talked about that this morning, and, unless somebody wants to talk further about it, the idea of linkages, for example, larval dispersal of lobster, and that's just one of many examples, and the Oronoco River plumes, and, I mean, the list is pretty extensive.

Then we talked about sargassum as a more global-scale consideration, and these are things we'll take into account, but they will kind of play a background role for now, as we develop the core of our fishery ecosystem plan. It won't be disregarded, but they're not going to take front and center right now.

Then the eighth topic, management within an ecosystem context, that's what Jocelyn talked about this morning, really how the Magnuson Act accommodates ecosystem-based management considerations, and I emphasized that Patrick and Link manuscript that we have in the G-drive regarding optimum yield and all the basically permissions it gives to incorporate an ecosystem approach in, and there's already established pathways for doing this within the Magnuson Act, and they argue strongly, and I think pretty effectively, for that, and so I wasn't really planning on talking any more about that, but that's up to you guys. If you want to, we certainly can.

Then Topic 9, the research needs, I think we're probably a little premature on that, and our research needs will come out of the work that we're doing now, rather than informing it, and, also, our research needs will become more clear as we accumulate data and analyze data and understand -- Use these analytical approaches to identify gaps, and those gaps will be -- Some may be management gaps, but a lot of them will be research gaps, and that will help to inform our list of research needs.

So, if you don't have any objections to that, I would like to go back to the goals and objectives and work on that a little bit more until 5:00, about a half-hour, and then, at 5:00, we will adjourn for the day, if that's okay with everybody.

Unless I hear objections, I had a sheet that I emailed to you, Graciela, which is very similar to what Liajay had prepared, and I just modified it a little bit, and, if you could bring that up on the screen, maybe we could have some contributions and make some progress on the goals and objectives.

GRACIELA GARCIA-MOLINER: Liajay has the email that you sent, and so that's what you wanted to see, correct?

CONTINUED DISCUSSION OF GOALS AND OBJECTIVES (348:41)

BILL ARNOLD: Yes, that's it. The first bullet is the overarching goal for now, and I don't consider it perfect or final, but I would like to leave it alone. What I would like is for the group, and everybody on the call, to provide some draft sub-goals, or objectives, and you may not even know which category it would fall into, and we can separate those out and them better organized as we move along, but, for now, I would just like to get your ideas and start building us some draft, and I emphasize "draft", because, again, it's not up to us to establish the goals and objectives, and it's up to the council to do that, but we're going to try to get them moving down that road.

As you can see, one thing I did is I took established georeferenced database and I moved that out of the sub-goal, and I moved that in as an objective, and that's a suggestion on my part. If you don't like it, we can move it, and I think there may be some of those other sub-goals to come over that we might want to consider to be objectives instead of goals.

Like that second bullet, the second bullet seems, to me, like a good example of a sub-goal, to build a framework and maybe provide a data repository, and that could be a sub-goal, and

then the objective would be to identify available databases and organize them in a compatible manner.

Another objective might be to build a -- I don't know what we would call it, and I know there's a great spiffy name for it, but not just a repository, but a central location where people, both inside and outside of NOAA, and it wouldn't have to be within the NOAA domain, but some area where we could work together on data analyses, and even document preparation.

That's something we tried to build when I was with NOAA, but the firewall constraints kind of prevented it, and maybe we can do it within the council, and maybe we can't do it. I mean, right now, our G-drive is serving that purpose, but the G-drive, for some of this stuff, has limitations, and so I would like to hear from the other folks, if you're willing and able.

TARSILA SEARA: I agree with that, and I was going to ask before if it would make sense to have a sub-goal that is just a more general sub-goal about I guess improving and enhancing data collection, and that would go for both biological and any socioeconomic data, something that would sort of capture all of that. Then, in the objectives, we could have some of these more specific ones, and then perhaps some of these bullet points could be moved under objectives.

BILL ARNOLD: Okay, and so, Liajay, what I would like for you to do is, as a third bullet, prepare a sub-goal of what Tarsila just said, and not under the FEP sub-goals, but farther up, under the second bullet. Make a third bullet, and it would go there. The sub-goals will go here as additional goals, and this is very draft. Go ahead, Tarsila, and let her know what you want to write.

TARSILA SEARA: Well, I don't remember what I said, but it was --

BILL ARNOLD: Create a centralized database, I think, a centralized location for data, centralized repository, or something like that.

TARSILA SEARA: Or even something even broader, if we're not comfortable with necessarily mentioning this repository as a sub-goal, or that could be an objective, but just something to capture this idea of enhancing and including data collection and data -- Do you know what I am saying?

BILL ARNOLD: Yes, and so that would be the sub-goal, enhancing

data collection, et cetera, et cetera.

TARSILA SEARA: Yes, something along those lines.

BILL ARNOLD: If it's just enhancing data collection, that's a perfectly good sub-goal. Remember these are draft, and so they don't have to be perfect, but we're trying to get the ideas down. Let's get the ideas down. Liajay, put "enhance data collection", and that's what we'll start with.

GRACIELA GARCIA-MOLINER: But don't drop out the central repository, because that's one of the things that we're actually working on.

BILL ARNOLD: So go down to objectives and create a new line, and put "centralized repository". How's that? While everybody is ginning up their ideas, let's look at these seven sub-goals right there, and I want us to pull them out and either put them under the bullet points or put them under the objectives, wherever you think they go best, and so enhance community resilience within the context of changing ecosystems. Do you feel that that's a sub-goal or an objective?

ORIAN TZADIK: I think that's a sub-goal.

BILL ARNOLD: I do too, but I'm just trying not to run the whole show here.

ORIAN TZADIK: I would say the first two probably, but I was going to ask the group whether topics like forage fish and the importance of like preserving forage fish and herbivores and kind of community structure and function would fall under this category as well and just need to be fleshed out, or are those a different thing?

BILL ARNOLD: I might say, Ori, that the idea of, for example, and just an example, of defining the food web, or something along those lines, would be a sub-goal, and establishing the role of forage fish, or something like that, would be an objective.

ORIAN TZADIK: But my question is can these objectives be folded into this sub-goal right there?

SENNAI HABTES: I think what you're describing, Ori, falls under defining present ecosystem status and functionality.

ORIAN TZADIK: Sure. Or there, yes.

BILL ARNOLD: Get it in there. Tell her what you want her to write and where you want her to put it.

ORIAN TZADIK: I think what I'm just saying is it sounds like a lot of the things, the objectives, that I'm thinking about are going to fall under these sub-goals that we've already listed here.

BILL ARNOLD: Okay.

GRACIELA GARCIA-MOLINER: Why don't you open up under each of them and starting the a, b, c under 1, 2, 3, 4, et cetera, so that we can capture everything that you are -- Does that work?

BILL ARNOLD: Right now, I don't care how pretty it is, but I just want to capture the ideas. Just throw out your ideas, and we'll build on them.

ORIAN TZADIK: I think that we're going to have to have -- I am not sure on the wording here, but some sort of consideration for those groups that I just mentioned, forage fish being one and herbivores being another.

BILL ARNOLD: Okay. Perfect.

TARSILA SEARA: Just a quick question. Just, the way I was reading this, I thought we were talking about the fishing community here.

ORIAN TZADIK: I was thinking about the marine community, like the fish community itself.

GRACIELA GARCIA-MOLINER: I think it was Sennai who said to bring it down into define present ecosystem status functionality.

SENNAI HABTES: Yes.

BILL ARNOLD: That's fine. We can keep -- We can put this in here, to enhance human community resilience.

TARSILA SEARA: Right.

BILL ARNOLD: Just add in "human".

TARSILA SEARA: Maybe that would be 2, ecosystem resilience, perhaps, what you were just talking, Ori, and I don't know.

BILL ARNOLD: If they want to put it under 3, that's fine with me. We know it doesn't go where it is right now, and so pop it out and -- I don't care if you put it under 2 or 3.

ORIAN TZADIK: Well, it's probably under both, because it's just different. All we have is the word "herbivore", right, and so --

BILL ARNOLD: But remember that you're going to have a list of goals and a list of objectives. We're not going to -- I guess we could, if you guys want to, and I wasn't necessarily thinking of the objectives going under each goal to which they pertain, for that reason, because an objective may pertain to more than one goal, but what do you think?

ORIAN TZADIK: No, you're probably right to have them separate.

BILL ARNOLD: That's why I was thinking you don't put them under these seven here, and these are going to be distributed out. Put them down there under the objectives as separate lines.

ORIAN TZADIK: Okay.

SENNAI HABTES: Bill, if I could make a suggestion. Considering we're just kind of at a starting point for this, I would say, even if they fit in different sub-goals, for now, leave it. Use this as a brainstorming session, and we can kind of decide on which one it fits better later. If I understand your point, what you wanted to do was start getting as much of the sub-goals and objectives down under it as possible.

BILL ARNOLD: Yes. Okay. That's fine, Sennai, and we still need to move these two, and I don't care where we move them, but we don't want them under human community, but I accept any location otherwise that you put them, 2 or 3 or 4 or down under objectives, whatever you guys want to do, but just tell her what you want, and she will do it.

SENNAI HABTES: Ori, that's yours, and why don't you decide whether 2 or 3 is a better fit for that.

ORIAN TZADIK: Sure, and so, in the context that I was thinking about it, it would be under 2, and I would like to add a third bullet point, which would be bycatch, because I think that relates as well.

BILL ARNOLD: Yes.

ALIDA ORTIZ: I totally agree.

BILL ARNOLD: You guys have free rein on this. Have at it. These are ideas, and spit them out.

STACEY WILLIAMS: Is this just looking at fish, or can we add like benthic components to this?

BILL ARNOLD: Absolutely, Stacey. These are the fishery ecosystem plan goals and objectives, and so this is ecosystem-level stuff.

STACEY WILLIAMS: I would like to put benthic components or organisms or composition assemblages.

BILL ARNOLD: You word it. However you want it worded.

STACEY WILLIAMS: I would say benthic assemblages.

BILL ARNOLD: Perfect. If you don't want it there, and you want it under another one of these numbered ones, or wherever you want to put it, just let her know. Under 3, I would put, as an objective, build an ecosystem status report. I don't care where it goes. We might as well put the things down that we're working on and give ourselves some credit when we actually succeed at something.

GRACIELA GARCIA-MOLINER: Under 3?

BILL ARNOLD: You can put it there or whatever you think, but it fits perfectly with 3. Tauna may want to comment on this, but she was working on the risk assessment.

TAUNA RANKIN: I was thinking -- I mean, I think something to the effect of understanding the risks to the ecosystem and tradeoffs with different management approaches or actions.

BILL ARNOLD: All right, and so go through it with her. Go slow and tell her where you want it.

TAUNA RANKIN: Sure. I think it would be an additional sub-goal, and so Sub-Goal 8. It would be understand the risks to the fishery ecosystem and tradeoffs from different management responses, or actions.

BILL ARNOLD: Say "strategies", Tauna, because we have management strategy evaluations, and so it ties in with that.

TAUNA RANKIN: Sounds good.

BILL ARNOLD: Is that okay?

TAUNA RANKIN: Yes.

BILL ARNOLD: Okay, and so an objective under that could be develop a management strategy evaluation.

TAUNA RANKIN: Yes.

BILL ARNOLD: Put it anywhere, and it doesn't matter. We'll get them organized, Liajay. Evaluation.

GRACIELA GARCIA-MOLINER: So management strategy evaluation, right?

BILL ARNOLD: Management strategy evaluation. It's a method, and Mandy knows all about it. She's done a beautiful one for the Gulf of Mexico. Okay. So, develop indicators, that should be an objective. Now, that could be under like key ecosystem linkages, or maybe not, but we could start it there, or we could just put it right where you are, develop indicators, and that's a really wide-open topic, obviously, and we can build on that, but at least we've got it in there. This is what we're looking for.

ORIAN TZADIK: Do we need to state a few things that might be like terribly obvious and might fall under the management strategy evaluation, such as preventing overfishing, for example?

BILL ARNOLD: Yes, and I would be careful about obvious, Ori. What may be obvious to you, or us, wouldn't necessarily be obvious to other people, and you've got to think broadly.

ORIAN TZADIK: Right, and so I'm wondering if we just put that in there, make sure to prevent overfishing and ecosystem overfishing.

BILL ARNOLD: Do it.

LIAJAY RIVERA: Could you repeat that again? Sorry, but I couldn't hear well.

ORIAN TZADIK: Just prevent overfishing and/or ecosystem overfishing.

STACEY WILLIAMS: What about like identifying gaps, like research gaps, maybe under the research priorities, the gaps, and also like the gaps between the actual what we are going to do for Lenfest, looking at the conceptual and the quantitative -- Most likely gaps between what people perceive as an indicator or what we actually can measure, and so I'm not sure where that would go.

BILL ARNOLD: Don't worry about that, Stacey. It's good idea, and I would say identify data. Is that what you're talking about?

STACEY WILLIAMS: Data gaps in research.

BILL ARNOLD: We can work on it. What we want to do is capture the basic idea, and so I would say, maybe under Number 3, another bullet would be build quantitative models. I do think that, somewhere in here, we should have build conceptual models. We're working very hard on that. We've got to give ourselves credit for the things we've done and we're doing and not just the things we hope to do. Any ideas for describe key ecosystem linkages?

STACEY WILLIAMS: Well, that relates to our development of the conceptual models, and the Lenfest project, actually, or the quantitative component.

BILL ARNOLD: Do you suggest maybe moving the model bullets under there, which is fine with me? I think so, because present ecosystem status is -- The model is not really for that. They are for looking into the future, and the conceptual kind of are, but definitely the quantitative are, and so yes.

TARSILA SEARA: Bill, do you think that Number 3 and 5 could be combined?

BILL ARNOLD: Possibly. One is present though, and the other one is kind of the linkages, and so you can plan and predict for the future might be a little bit of a difference, but, hey, I would go either way on that.

TARSILA SEARA: Just because, in that way, you would have those objectives that could be important for both together, and that was just my thought.

BILL ARNOLD: It's okay now if we don't, and it's okay now if we do, but that's a good thought. There is nothing sacred about

these eight points. We had them, but they're not engrained in the Code of Federal Regulations or anything. We have free rein on this. We can do anything we want with it, until Jocelyn tells me different.

ORIAN TZADIK: I would -- Just looking over this list, I would add two more things, and one is, under Bullet 2, after Stacey's suggestion for the benthic assemblages, I think we need to have in here somewhere the fish assemblages, right, that just the fish community structure and function?

BILL ARNOLD: Sure.

ORIAN TZADIK: Then I think that there should be something somewhere about maintaining biodiversity.

BILL ARNOLD: Excellent idea. Just keep in mind that we will almost certainly visit this again tomorrow, and so I think we're finally getting some good progress on this as a very draft document. Then everybody is going to lay in bed all night thinking about new things and bring them into the meeting tomorrow, and I know I'm excited about that, but hopefully maybe one idea will pop up into your minds overnight, and we'll further expand it tomorrow.

ALIDA ORTIZ: I have a comment. I don't know where to put it, but, when you say, "enhance human community resilience within the context of changing ecosystems", how -- Can I include there like a sub-bullet of the education?

BILL ARNOLD: I would say that would be an objective, to develop an education program or something along those lines.

ALIDA ORTIZ: Okay.

GRACIELA GARCIA-MOLINER: Do you want it right under Number 1?

ALIDA ORTIZ: An objective for Goal 1.

BILL ARNOLD: Sure.

LIAJAY RIVERA: Could you repeat it again, Alida, please?

ALIDA ORTIZ: Education --

GRACIELA GARCIA-MOLINER: Develop an education program.

ALIDA ORTIZ: If you put it there, then I will dream of it,

because it is not just materials, but it is that they understand and that they get very familiar with that marine ecosystem and that it is a changing ecosystem and education program on essential fish habitats, we know.

BILL ARNOLD: Would you say on ecosystem function, Alida?

ALIDA ORTIZ: Ecosystem function. That's good.

BILL ARNOLD: Okay, and so just keep in mind that this isn't perfect, but an objective is more action oriented, and a goal is more you want these actions to achieve this goal, and so you now have a new standard for management or something.

ALIDA ORTIZ: Probably it could be changed in front of the objective.

BILL ARNOLD: It is. The bullets are objectives. The numbers are the goals. Good. What else?

STACEY WILLIAMS: Maybe under 7, identify additional like indicator species and not just ecosystem essential species, but indicator species?

LIAJAY RIVERA: Identify additional --

STACEY WILLIAMS: Indicator species, and you could get rid of "additional" and say just "indicator species".

BILL ARNOLD: I have a question for you, Stacey. There are indicator species and then there are ecosystem indicators that may not be the same, or maybe they are, but do you consider all indicators to be living marine resources?

STACEY WILLIAMS: I don't consider them the same. I think they're two different things.

BILL ARNOLD: Okay.

STACEY WILLIAMS: But I could be wrong. I would like to hear from other people, but I see that as --

BILL ARNOLD: One thought is we should also address ecosystem indicators, and my second thought is, for Kevin, we should have -- I would think he would want to add some data objectives to this.

KEVIN MCCARTHY: Well, I would agree with you there. I mean,

we've talked about it, things like identify data gaps and identify research priorities, and can we just take a second, so that I'm clear? You explained a little bit, but we've got sort of three levels going now, right, and we've got objectives, and we've got these sub-goals, and we've got goals.

BILL ARNOLD: We've only got one goal, and that's our overarching goal, Kevin. There is only one goal. Then there are these sub-goals.

KEVIN MCCARTHY: Okay, but we do have a few bullet points up above, but I don't want to get back into that, but we need to run through again what -- Can you just run through again how you differentiate between a sub-goal and an objective? You said it a minute ago, but I want to be clear.

BILL ARNOLD: I am not perfect on this, and we can talk about it, but a goal is aspirational. This is a concept that you want to achieve. We want to enhance community resilience. Okay. Well, there's a lot of ways that you can do that. We know we want to do it, and that's a goal. We need a specific, achievable, actionable objective to achieve that goal.

KEVIN MCCARTHY: Okay. So, given that, and we don't have to revisit it now, but, given that, what is forage fish as an objective? I think we need more behind that. We don't have to revisit it now, because maybe that's just a placeholder for a larger idea, and I'm fine with that, but I just want to be clear on what we're doing here, but I do agree with you on the data side of it, yes, and so we might want to have a whole section.

BILL ARNOLD: This is very, very draft. I was just anxious to get the ideas.

KEVIN MCCARTHY: Yes, I agree completely, but I also agree with you on, whether or not we want to organize it this way, having another header here of -- If you were talking about data, I can see objectives underneath some kind of data sub-goal.

Identify research priorities is sort of an objective in that, maybe, and it depends on how you want to think about it, and identifying data gaps is clearly an objective, and so those kinds of things could all be rolled together under some broader data sub-goal, and I think that's a fine idea, Bill.

BILL ARNOLD: Let's get that, at least a rough idea of what we want that data goal to look like, so we have it, so we capture it while we're thinking about it. Let's make it Number 9, and

then we'll adjust accordingly, but let's get it down first. Let's get that sub-goal down. It would be something along the lines of address data needs, or something like that, Kevin, and what do you think?

KEVIN MCCARTHY: I am thinking now, because we're sort of going through this at the Science Center right now as well, and so I'm trying to think of some of the terminology that we've been using. Give me a minute, and I will get back to you.

BILL ARNOLD: Okay. This is what we're going to do. This was an excellent start, and it's 5:00, and I promised that we were ending at 5:00, and so let's end at 5:00. We will be addressing this more tomorrow. Is everybody okay with that?

GRACIELA GARCIA-MOLINER: Bill, if anyone feels the need to go into the shared folder and make changes, just make sure that you track the changes, so that we can discuss them tomorrow.

BILL ARNOLD: Okay. I am suggesting adjournment. If everybody agrees, then nothing more needs to be done. If there's any objections, we can take a vote. I didn't think there would be.

GRACIELA GARCIA-MOLINER: So tomorrow at 9:00?

BILL ARNOLD: Tomorrow at 9:00. Thank you, everybody.

(Whereupon, the meeting recessed on June 1, 2020.)

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June 2, 2020

TUESDAY MORNING SESSION (0:09)

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The Ecosystem-Based Fishery Management Technical Advisory Panel of the Caribbean Fishery Management Council reconvened via webinar on Tuesday morning, June 2, 2020, and was called to order by Chairman Bill Arnold.

BILL ARNOLD: Today is June 2, 2020, and it is 9:00 a.m., and we are beginning and recording the Caribbean Fishery Management Council's Ecosystem-Based Fishery Management Technical Advisory Panel meeting. I am Bill Arnold, and I am the chair of this group, and I would like to do a roll call, beginning with the TAP members, and so I will call your name, and please introduce

yourself, et cetera, et cetera. I am going to do it in order of how you appear on my screen, and so let's start with J.J.

JUAN CRUZ-MOTTA: Good morning. J.J. Cruz, EBFM TAP member and University of Puerto Rico at Mayaguez. Good morning, everybody.

BILL ARNOLD: Good morning, J.J. Alida.

ALIDA ORTIZ: Good morning. This is Alida Ortiz, and I am from the Outreach and Education Advisory Panel of the council.

BILL ARNOLD: Sennai.

SENNAI HABTES: Good morning, everyone. Sennai Habtes, EBFM TAP member, and I'm a Research Assistant Professor at the University of the Virgin Islands.

BILL ARNOLD: Stacey.

STACEY WILLIAMS: Good morning. My name is Stacey Williams, and I'm an EBFM TAP member from the Institute for Socio-Ecological Research.

BILL ARNOLD: Tarsila.

TARSILA SEARA: Hello, everybody. Tarsila Seara, EBFM TAP member and University of New Haven.

BILL ARNOLD: Kevin.

KEVIN MCCARTHY: Good morning. Kevin McCarthy, EBFM TAP member, Southeast Fisheries Science Center, Miami.

BILL ARNOLD: Ori.

ORIAN TZADIK: Good morning, everyone. Orian Tzadik, Pew Charitable Trust, EBFM TAP member.

BILL ARNOLD: Okay. I think that's the total membership. Let me know if I missed anybody, but I don't think so. All right. Now I'm going to go through everybody else with the same thing, looking at the order on my screen. The first person up is Liajay.

LIAJAY RIVERA: Buenos dias. Liajay Rivera, council staff.

BILL ARNOLD: Graciela.

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

BILL ARNOLD: Iris.

IRIS OLIVERAS: Iris Oliveras, council staff.

BILL ARNOLD: Mandy.

MANDY KARNAUSKAS: Mandy Karnauskas, Southeast Fisheries Science Center.

BILL ARNOLD: David.

DAVID DALE: David Dale, Southeast Region Habitat Conservation.

BILL ARNOLD: Vanessa.

VANESSA RAMIREZ: Good morning, everyone. Vanessa Ramirez, council member and commercial fisherman, Puerto Rico.

BILL ARNOLD: Jocelyn. I know she's out there. We'll come back to Jocelyn. Sarah.

SARAH STEPHENSON: Good morning. Sarah Stephenson, NOAA Fisheries.

BILL ARNOLD: Marcos.

MARCOS HANKE: Marcos Hanke, council chair. Good morning, everyone.

BILL ARNOLD: Kelly.

KELLY MONTENERO: Good morning, everyone. This Kelly Montenero from the Southeast Fisheries Science Center.

BILL ARNOLD: Carlos.

CARLOS FARCHETTE: Good morning. Carlos Farchette, council member.

BILL ARNOLD: Tauna.

TAUNA RANKIN: Good morning. Tauna Rankin, NOAA Fisheries Office of Habitat Conservation and the Coral Reef Conservation Program.

BILL ARNOLD: Maria.

MARIA LOPEZ: Good morning. Maria Lopez, Southeast Regional Office.

BILL ARNOLD: Jocelyn. She's on, but she's probably busy doing something else, and that's okay. I have a Caller 02, and that could be Kevin, but I'm not sure.

KEVIN MCCARTHY: I think that's me, Bill.

BILL ARNOLD: Okay. That's everybody I have, and so I hope that's a complete list, but, if not, speak up, if I missed anybody. Okay. I would like to dive right in by going back to the goals and objectives and pounding away on them until we get something that we're -- Well, we'll do it for the next hour, and then we'll take a break, and then we're going to move over to the FEP outline, and, if we need to, and I think we'll have time, we'll come back to the goals and objectives.

I would remind you that I don't expect these things to be completed, but, as I said yesterday, we want to give the council a good start point, but we don't want to do their job or the DAPs job or whoever works on these things. We don't want to do their jobs for them, but we just want to give them a good foundation upon which to build their goals and objectives.

I have on the screen what we were working on yesterday, and I know that everybody stayed up all night thinking about this, and so let's hear your thoughts, and don't be shy, please. We are just throwing out ideas.

SENNAI HABTES: Instead of the "address data needs" -- I was looking through some of the other FEPs, and one that came to mind was to improve the quantity and quality of available information to support marine ecosystems management. I think that might be a better way to state that objective, and then we can create sub-bullets defining specific objectives within that for the lack of data or improving coordinated management of the data.

BILL ARNOLD: Okay. I like that, and so, first, go with Liajay and get it written down the way you want it.

SENNAI HABTES: To improve the quantity and quality of available information to support marine ecosystem management. This one was, I think I saw, straight out of the American Samoa FEP, and we can always adjust and change it, if we want to make it more

specific to the Virgin Islands and Puerto Rico.

BILL ARNOLD: Okay, and so two things. One, I like that you're looking at those other FEPs, and we don't want our FEP to -- We don't want to feel obligated to follow any previous pattern, but they do provide a lot of good information, and ours can be built the way we want it to be built. The second thing is let's talk about this. Does anybody have any comments on the wording or on additions, et cetera, et cetera?

MANDY KARNAUSKAS: I just had kind of an overall comment that would help me wrap my head around this topic a little bit more, and I think you touched on this yesterday, that some of these seem like they are goals, and some of them seem like they are objectives, and, within the objectives, we have both strategic objectives and operational objectives, and so it might help differentiating those categories if we have the objectives that are meeting certain goals, and that might help me wrap my head around this.

BILL ARNOLD: Okay, and so I certainly agree with that, Mandy, and I was trying to get the ideas down first, but, if you guys would rather kind of get these things reorganized and differentiate between these, quote, unquote, sub-goals and objectives, and then continue with our building process, that's fine with me, just let me know if that will make you more comfortable with giving input, or if you would rather just keep throwing things against the wall, and then we can clean them up later, and I'm happy with either approach. I think, if we reorganize, it sounds like some of you would have a better idea of what you want to add and how you want to word it, but let me know.

ORIAN TZADIK: In response to Mandy, what I think is going on, and the way I've been thinking about this, is that the bullets are objectives and the numbers are the goals, for right now.

BILL ARNOLD: Yes, and that's kind of how we've structured it. That's right.

ORIAN TZADIK: Right, and the way we've kind of spoken about it is that, while one of the objectives is under a certain goal right now, that's not necessarily only applicable to that goal, and so it's kind of easier for me to look at it like this, but, if other people want to look at it in a different way, that's fine.

Just to add on to what Sennai said, and you asked for feedback

on Sennai's goal, I like what he's got there. I don't know if we want to change the word "information" to "data", or it's fine as "information" for me, but, if we want to clarify it, and then I think that the rest of what we're going to talk about will be those bullets under these objectives.

BILL ARNOLD: Okay. Regarding "information", information is not necessarily the same as data. You could say, and I'm just suggesting this, "available data and information".

ORIAN TZADIK: Yes, that works.

BILL ARNOLD: Because they are not the same, and I think information can be things like citizen science and observations and stuff, and data is generally, in my mind, quantitative information. If you guys agree with that -- So, in a more general comment, Mandy also mentioned, and maybe it's premature for this, but strategic versus more tactical goals or objectives, and maybe it's a little early for that, but let me know your thoughts on that.

Then the third thing I would say, quickly, is, those objectives we have down below, we should probably pull -- If this is the way we want to organize it, we should pull those out and put them where we want them in the upper list and just work off of that upper list, the numbered list, and so have at it with comments, please.

JUAN CRUZ-MOTTA: Bill, a question. What is the formal definition for goal and for objective?

BILL ARNOLD: I wouldn't call it formal, but what I tried to lay out yesterday was that a goal is more aspirational, and an objective is a specific activity that you undertake to achieve that goal, and so, if you want to enhance ecosystem resilience, and we obviously haven't defined this, and that's okay, but you need to do something with forage fish, and what you do with forage fish should probably be like establishing a data collection method or building a food web or something like this that's actionable, understanding the ecosystem or whatever, and she took it off the screen, and so I don't remember what it said, but that's not, in and of itself, an actionable item. It's something you want to accomplish by achieving these objectives. Like I said, that's my view of it, and you may not agree, and, if you don't, then that's fine, and let's hear a better idea.

JUAN CRUZ-MOTTA: Thank you, Bill. That sounds reasonable to

me.

BILL ARNOLD: Okay. Hopefully to everybody else too, but, if not, please speak up. Would you guys please bring the list back up? First, let's make sure that everybody is comfortable with the discussion that J.J. and I just had on goals versus objectives. Is everybody okay with that?

ORIAN TZADIK: I agree with that.

ALIDA ORTIZ: I agree with that, too.

TARSILA SEARA: Yes. It makes sense.

BILL ARNOLD: Okay. I want to emphasize that we're building a draft here, and the council has the authority and not us, but okay. Let's keep moving forward with this. We can make changes on the fly, if we wanted to start -- With any one of these numbers or bullets, if you want to put, in parentheses afterward, strategic versus tactical, or something like that, that's fine with me. I mean, you wouldn't have to do it with every one, but we're just kind of getting our thoughts organized here. Tarsila, did you have something that you wanted to add?

TARSILA SEARA: I did, yes. Just, actually, before we go there, I just wanted to say that this Bullet Number 9 here, that's kind of where I was going yesterday, when we were talking about enhancing data collection, and so we can just get rid of that up there, I think, if we're capturing it here, so we don't get confused. This is much better worded, but we had something up there that was about enhancing data collection, and so we can just clean that up, and I think it was under goals, further up.

BILL ARNOLD: That bullet, we can get rid of that bullet.

TARSILA SEARA: Yes.

BILL ARNOLD: Thank you.

TARSILA SEARA: I was thinking about this, and, if we're sort of brainstorming and just throwing some stuff out there, I wanted to put some language under the human community resilience bullet, and so I haven't thought about how necessarily to word this, but just some ideas that we can work on, if that's okay.

BILL ARNOLD: Absolutely.

TARSILA SEARA: All right. So some sort of the usual suspects

that would go under this idea of community resilience, and so increase adaptive capacity to impacts, such as natural disasters and climate change. We can put that in parentheses, just to capture those ideas there.

Another bullet would be strengthen local markets, supporting businesses, and I guess we could say infrastructure there too. Another bullet point would be something along the lines of safety, health, and wellbeing considerations.

BILL ARNOLD: Hold on a second. I want to make them kind of actionable, Tarsila, and so --

TARSILA SEARA: I haven't really thought about the wording there, and I'm just kind of throwing things out, and so, if you want to change the wording now, we could do that.

BILL ARNOLD: No. If you want to get all of your ideas out, go ahead and do that.

JUAN CRUZ-MOTTA: I was going to suggest "to promote safety, health, and wellbeing".

TARSILA SEARA: That's great, yes. My other thought was with regard to participation in the management process, and I don't know what verb we want to use there, but perhaps we can just put "participation in the management process" for now, and then we can think more about how to word it.

JUAN CRUZ-MOTTA: To engage stakeholders in -- That doesn't sound right.

TARSILA SEARA: To increase, something like that perhaps, engagement in participation.

BILL ARNOLD: You could say to increase engagement in the management process.

TARSILA SEARA: Yes.

BILL ARNOLD: I mean, we have an engagement strategy that is specific to -- This ties right into it.

TARSILA SEARA: Another thought was minimize conflict, and, again, we can elaborate on that, and the other thought was in terms of equity and opportunity and access to participate, and so I'm not sure exactly how to order that, but equity and opportunity to participate in the fisheries.

BILL ARNOLD: I assume you mean "equity" as in capital, but maybe not, and so I'm not sure what you mean by that.

TARSILA SEARA: In terms of access, just equity in terms of access and opportunity to participate in the fishery, so that everybody has the same or similar opportunity in access.

BILL ARNOLD: Okay, and so not equity in the sense of capital, and would you like to say, "build equity and opportunity"?

TARSILA SEARA: Yes.

BILL ARNOLD: Or build equality and opportunity?

TARSILA SEARA: Yes, if you think that's a better way to word it, and that's fine with me. Equality, you think that's better?

BILL ARNOLD: Well, when I think of equity, I think of it in the economic sense, but that obviously isn't the only way it's meant, but that's just what comes to mind for me.

TARSILA SEARA: If you think that's going to make it clearer, I think that's perfectly fine.

ORIAN TZADIK: Can I make a suggestion?

BILL ARNOLD: Of course.

ORIAN TZADIK: Tarsila, a couple of these bullets that you're pointing out I think fall under two goals that were being touted by a different FEP, and I believe it was the west coast, or the Bering Sea, but, with regard to these last couple of ones, they have it as promote equitable use of fishery resources, and then, to capture some of your other ones, they also have one that says to promote sustained participation of fishing communities.

TARSILA SEARA: Nice.

ORIAN TZADIK: So both of those, I think, and then some of the sub-bullets under those, and they have, for example, promote efficiency and profitability in the fishery, including stability of catch, promoting increased safety at-sea, avoid consolidation of fishing and processing capacity, and so I wonder if those are two that kind of do a little bit more catchall for you.

TARSILA SEARA: Yes. I mean, if there's some language that we can borrow from some of these things, why not? That sounds good

to me. It sounds like along the same lines of exactly what I was trying to convey there, and so, yes, that sounds great.

ORIAN TZADIK: I was listening to you go through it, and I was like, well, this could be --

TARSILA SEARA: Like I said, they're sort of the usual suspects, and so I'm sure we're going to find some of that, and I can certainly look and see if there are other documents that we can maybe borrow some language too, if that helps.

BILL ARNOLD: Two things. For everybody, typing this stuff is not an easy job. It's hard to keep up, et cetera, et cetera, and so keep Liajay in mind when you're doing this, and let's make sure that we're going slow enough for her. Second, I like what Ori is saying, but let's just keep in mind that we don't want to get too deep into this and too far down in the details, because we want to make sure that we maintain freedom of movement for the council and for the constituents, that they want to bring into this process. Okay. Next.

TARSILA SEARA: That's all I have.

BILL ARNOLD: Okay. Very nice. Thanks, Tarsila. Okay. Who else?

STACEY WILLIAMS: I have a question, and I think it's like the last bullet about the available database, like Number 9, and I think we should just delete one word, but how to improve the quantity and quality of available data. If the data is already available, how would you improve that, the quantity of it?

BILL ARNOLD: Well, you could say quality and availability or something like that, and I don't know. Go ahead.

STACEY WILLIAMS: Maybe just deleting "available", and I don't know. Maybe improve the quantity and quality of data.

BILL ARNOLD: Kevin, any thoughts on this? You're our data expert.

JUAN CRUZ-MOTTA: I see two different things that need to be done in that bullet, and that is -- Stacey, this is a process that now we are going through, and I put as an example the SEAMAP-C data, and that SEAMAP-C data is already there, and it already exists. However, it's really, really hard to access that data, and so I think, when they are saying quantity or quality of available data, perhaps that point is referring to

data like SEAMAP-C data that exists, but it's not accessible at the moment, and so we should aim for all that data that exists to be easily accessible for the general public.

Then I was going to go point-by-point, but, now that we have jumped to Number 9, I wanted to follow-up on what Stacey just mentioned, and, in that point, we should do two things. Not only should we improve what we have, the access and availability of what we have, but also, which is different from what I just said, is to also foster gathering further data, or getting more data. Thank you, Bill.

KEVIN MCCARTHY: Maybe one way to phrase this, and I think this is an important sub-goal, or whatever we're calling them, but perhaps to improve the quantity, quality, and availability of data and information.

BILL ARNOLD: Okay. Don't do anything yet, Liajay. This is what I'm going to suggest here, is 9 is kind of a mix of a goal and objectives. I would think that the bullets would be the quantity, the quality, the availability, maybe, whatever you guys think, but you want to get the data better, and that's a goal, and an actionable item is to increase the quantity, maybe, for example by getting electronic reporting, and the quality maybe by doing more port sampling and things like that. Those are actionable items, and I think those are objectives, but let me know what you guys think.

KEVIN MCCARTHY: I guess I'm fine with that, and so how would you phrase -- Maybe I missed it, but how would you phrase or rephrase this and then have a series of bullet points? So, if quantity, quality, and availability are bullet points, what is 9?

BILL ARNOLD: As a rough start, to improve data and information needed to support marine ecosystem management.

KEVIN MCCARTHY: That's still an action, "to improve". What about improve data?

BILL ARNOLD: Sure.

KEVIN MCCARTHY: I mean, maybe I'm just being a grammatical stickler here, but, if we want goals to be aspirational and objectives to be action, I would phrase it that way, at least as a first cut.

BILL ARNOLD: Okay. One step at a time, and the first is pull

quantity, quality, and availability, as a start point, out, and they're going to be bullets, separate bullets, but just put them down below. That's perfect. Just put them all there, and we'll clean them up. Now let's just focus on 9, and, Kevin, tell her how you want that written, and this is not trivial, because it may seem simple to us, but remember we're taking this out to a larger group, and we want to make sure that this is as clear and easily understandable as we can make it. I think you were saying --

KEVIN MCCARTHY: I am wondering if it makes sense to make these three bullets or -- I mean, availability is a separate issue than quantity and quality.

BILL ARNOLD: Yes, I agree.

KEVIN MCCARTHY: So I would definitely split out availability, because we all know that that can be problematic, when you're sitting in a meeting and somebody mentions, at the last minute, that so-and-so has a dataset, and nobody in the room has ever heard of it.

BILL ARNOLD: Right. I would separate quantity and quality.

KEVIN MCCARTHY: I guess I'm having a -- I don't have strong thoughts on that. I am thinking we don't just want more data. We want more good data, or informative data, right, and so I want to somehow get that message in there, because promoting the idea of let's just send people out to collect a bunch of data that is not really focused on a need is not useful.

What you get then, at least in my experience, is people showing up at let's say a data workshop and being very insistent that they've got loads of data, and you spend lots of time on data that do not inform the issue. I want to somehow get across the idea that we need the right kinds of data, because we have, farther up in here, identifying data gaps and sort of setting research priorities, and so that, to me, is critical in all of this, rather than -- We don't want just more data, but we want more data that are informative. That, to me, goes to quality.

BILL ARNOLD: So, obviously, quality is a higher priority, and these aren't ranked in priority order, but, if you want, you could either move quantity down after quality or delete quantity altogether, whatever you think.

ORIAN TZADIK: Can I make a suggestion?

BILL ARNOLD: Yes.

ORIAN TZADIK: Kevin, this addresses kind of what you were talking about yesterday, where you said some of these bullet points don't really mean anything, when you just have kind of forage fish up there, and what do we mean about forage fish, and that was what Bill was saying earlier, that we need to start maybe considering food web modeling and that sort of thing, and so these bullets, I think, need to be fleshed out into objectives and actionable items, right?

KEVIN MCCARTHY: Absolutely.

ORIAN TZADIK: So I think that we have these different categories of what we're talking about, and availability, to me, means like the SEAMAP data, for instance, and I know somebody who was dedicated to looking for it for several months couldn't get it, right, and so that's availability. Just data that exists is in a place that can be accessed, and we're going to have to flesh out the appropriate wording, but I think we're all on the same page.

When we talk about quantity, and I hear what you're saying with regard to like, well, we want quality, but, to me, the quantity aspect has to do, I think, with continuous datasets, and so not just more data of somebody coming out and doing another project and then leaving again, like I presented yesterday, and we have water quality from some back bay in St. Thomas in 2013 or something, and that doesn't really help anybody, but, if that project had set up a sustainable model that could continue collecting data since 2013, we would have much more to go on. To me, that's what quantity means, and I don't know if that opinion is shared.

KEVIN MCCARTHY: I think that's good.

BILL ARNOLD: How about if we changed it to temporal and spatial resolution, or something along those lines?

JUAN CRUZ-MOTTA: I have a suggestion.

BILL ARNOLD: Go ahead, J.J.

JUAN CRUZ-MOTTA: What about making the three points bullets for Point Number 9, and the first one will be to identify data gaps, and that will mean moving what is in Number 6 to Number 9, and then the second bullet will be to collect data that we have identified above, and then the third one will be to increase

availability of what exists. That's a suggestion, and I am open to further consideration.

MANDY KARNAUSKAS: I have another suggestion for this point. I think the points made by Kevin and Ori were very important, and another just pitfall that I want to warn against is this issue of quantity of data in an ecosystem management plan makes me very nervous, because we often envision building complex ecosystem models and trying to collect the data to parameterize more complex models, when the reality is we don't have the species data that support these for management, and so I think we need to be very careful in suggesting that we need more quantity of data. As Ori and Kevin mentioned, we need to maintain the basic data streams and strengthen those before we can talk about collecting more data.

BILL ARNOLD: I think we should delete "quantity". Nobody seems to like it.

KEVIN MCCARTHY: I think that is true, Bill, and I would say identifying research priorities fits under this, rather than quantity. As Mandy said, it's not always -- Well, I guess several of us have said now, but you can get more bang for your buck with some research projects than you can with others, although they might both be useful.

One might be useful, as we all know, in more inclusive ways, but the other thing that I would say here is, I mean, we could do this for days, setting -- So I'm wondering if we might not want to take a step back and think about do we have a complete set of these sub-goals, because we could spend a long time talking about each one of them, but I'm wondering if we don't want to really spend our time, at least for the rest of the -- So we've got another half-hour or so, but if we were to spend the rest of this period before the break thinking about those sub-goals.

We could all parse out those sub-goals into a very long list of any one of them, and I'm wondering if that's how we best spend our time at this moment, rather than finishing up the sub-goals, because we can't really have an objective without a goal, and so I'm wondering if that might be a better way to do it over the next half-hour.

BILL ARNOLD: That's why I'm saying I don't want to get too far in the weeds on this, but one thing I would like to do, if possible, is to get those objectives that are down below and either get rid of them or pull them up into here. Like establish georeferenced database, for now, we could throw that

under Number 9 as a bullet, a centralized repository. Like I said, either get rid of them or somehow just clean that up, and then I agree that we should -- We don't have to have a complete list of sub-goals, again, for the council, but we want to have all the sub-goals we can think of.

GRACIELA GARCIA-MOLINER: Bill, can you just read what Vanessa wrote, because this is an issue that we're having, and so, increase quality and quantity, for example, Puerto Rico has lots of data, but they are different from what the fishers actually keep in their books, and so that kind of developing trust, so that we can access the databases that the fishers have, to compare to what we have and see what we're missing.

BILL ARNOLD: Okay. I agree with the comment. I think that, at least at the present time, that would be covered under quality, and I think that's good for now. If you want to --

GRACIELA GARCIA-MOLINER: Well, in terms of what she is saying, I would add something that brings it to the human dimension in basic trust.

BILL ARNOLD: Okay. Put it down there. Go ahead, Graciela.

GRACIELA GARCIA-MOLINER: You mean to put a bullet in there? Just under quality, and just open parentheses and improve trust between management and stakeholders.

BILL ARNOLD: All right, and so put that in parentheses. That may be out of place, but at least we've caught it, and we've got it.

GRACIELA GARCIA-MOLINER: Yes. So parentheses next to "quality". Thanks.

BILL ARNOLD: Okay. Any thoughts on those last four objectives down there, and then we'll move forward?

STACEY WILLIAMS: Also, in quality, just a standardization of how data is collected, because, just for the fishery-independent surveys, they are collected all differently, looking at just specifically fish assemblages, and so maybe we would want to promote the standardization of how data is collected.

BILL ARNOLD: Okay. Let's move on. That's enough. We'll clean up those objectives, if you wish, and then let's get these sub-goals as far along as we can get them.

KEVIN MCCARTHY: I am just wondering if the centralized repository -- Is that a Number 9 item?

BILL ARNOLD: I think so. I kind of think it goes with the georeferenced database, but, if you guys don't, that's fine, but let's get it up there as a bullet for now, and we can clean it up later. I think management strategy evaluation should go under one that was farther up, in the same place as the ecosystem status report was. A bullet under 3. Then develop indicators, and let's get that, please, because we definitely want to capture that, and that's an objective.

TAUNA RANKIN: I think that could fit under 3 and/or 4.

BILL ARNOLD: I like it under 4. I think it's more shooting forward, but what do you guys think?

JUAN CRUZ-MOTTA: It's not about where you put it, but can we change that to "identify indicators", instead of "developing indicators"?

BILL ARNOLD: Absolutely. Okay. That's good for now, and so go back down, because I think that prevent overfishing and/or ecosystem -- I think this is more of a sub-goal than an objective. What do you guys think?

KEVIN MCCARTHY: I agree with you. That's a big item.

BILL ARNOLD: Yes, and we can reorganize, but put that up as Number 10, please, and then we'll get back to setting up sub-goals. That's Number 10. Okay.

TAUNA RANKIN: Could we actually make it more aspirational and say like achieve optimum yield, or maybe add "and achieve optimum yield", to the end?

BILL ARNOLD: Well, kind of, and optimum yield might be a separate sub-goal, because that goes way beyond overfishing.

TAUNA RANKIN: True.

BILL ARNOLD: Comments?

MARIA LOPEZ: I just think that, where we have management strategy evaluation, we should have monitoring.

BILL ARNOLD: So you want another bullet point?

MARIA LOPEZ: I think that can be together, evaluation and monitoring.

BILL ARNOLD: Okay, but a management strategy evaluation is a specific process, and Mandy knows all about that.

MARIA LOPEZ: Right. All right. Then you can separate it into two.

BILL ARNOLD: Monitoring what?

MARIA LOPEZ: Well, we can monitor the management strategies that have been put into place, and, also, I thought that we were talking about monitoring the indicators too, which is something different.

BILL ARNOLD: Okay. So you could put down, under 4, identify and monitor indicators, or would you want that as a separate bullet? Maybe it should be a separate bullet. Okay. Let's get back to the goals, because I agree with Kevin that we could do this for weeks.

JUAN CRUZ-MOTTA: I don't want to drag this out, and I know you want to get moving, but I want to go back to the maximum yield point.

BILL ARNOLD: Optimum yield? Okay.

JUAN CRUZ-MOTTA: Yes, and I have a question. That's associated to single species, right?

BILL ARNOLD: Oh, no, not necessarily.

JUAN CRUZ-MOTTA: Okay, and so you can talk about the optimum yield for the whole entire assemblage of fished species?

BILL ARNOLD: Or sub-assemblages, J.J. One thing that's in the Magnuson Act is you can do a biomass-based ACL, for example, and that could be like a group thing. Like forage fish, and, instead of each individual fish, and, Kevin and Mandy, please speak up, but that is an option, and so I would not -- I would be careful to combine optimum yield, because optimum yield has so many implications associated with it. Any comments on that?

MARIA LOPEZ: Bill, I have a question. Where do the stock assessments -- If we were to incorporate ecosystem information into stock assessments, where would that be captured?

BILL ARNOLD: You could make that a sub-goal, to achieve ecosystem-based assessments or something like that. It doesn't have to be just an objective. That's a pretty big deal.

MARIA LOPEZ: Could that be part of Number 9? When you are improving the data and information needed, you can incorporate that information, as possible, into the stock assessments.

BILL ARNOLD: I think it's a sub-goal.

JUAN CRUZ-MOTTA: Can I say something, Bill, to that?

BILL ARNOLD: Go ahead, J.J.

JUAN CRUZ-MOTTA: Since stock assessment is part of the island-based fisheries management plan that has already been developed, and that's the regulatory tool, and, given that these plans that we're developing is a guide, I would like to suggest to try to avoid an aspect from that IBFMP plan that refers to single species.

A stock assessment, as most of the stock assessments that I'm aware of here in the island, were focused on a single species, or a single group, and my suggestion to the rest of the group would be to try to avoid those elements in that plan that refer to single species. That's why I was talking about the optimum yield.

BILL ARNOLD: All right, and so an aspiration we have is to conduct assessments that account better for ecosystem considerations, however you would want to word that, and I think that's a sub-goal, because, as you said, we're doing single-species assessments, understandably, but we want to do -- I mean, a whole key goal of this is to be able to achieve, or to conduct, assessments that incorporate ecosystem considerations in the plan, and, again, I mean, we don't have a pure -- We don't have Shannon on the line, for example, but Kevin knows a lot about this, and others as well, and so please speak up, and let me know what your thoughts are on this.

KEVIN MCCARTHY: I was just going to say that certainly it could be a goal that to move towards incorporating more ecosystem elements into stock assessments.

BILL ARNOLD: Stop. I want it to be a sub-goal, and so let's make it a sub-goal, and then you --

KEVIN MCCARTHY: Well, a sub-goal, whatever the terminology is.

BILL ARNOLD: I know, but you're laying it out, and so, as you talk, I want us to capture it.

KEVIN MCCARTHY: Okay. Got you. Because let's not forget that we're still under Magnuson, and we've still got to come up with the alphabet soup of management advice, and so we're still there, and that's the reality, but we can begin incorporating the ecosystem information into those stock assessments, and I don't know if you saw Mandy's presentation the other day, Mandy and others, of how that's beginning to be used in the Gulf of Mexico.

Things like incorporating red tide effects into stock assessments, and so moving in that direction -- You know we're not going to do it overnight, but moving in that direction could be a sub-goal, and then, of course, there would be a laundry list of things underneath it that would have to happen to get there, but it makes sense to me to include that.

I appreciate J.J.'s comments too that this is -- We're talking about ecosystem-based stuff, and now we're narrowing down to stock assessments, and including that, in that it very much has been a single-species, or a group, but the idea of utilizing this ecosystem-level information towards improving those stock assessments, I don't know if -- I mean, it makes sense to me, but the group may feel that it's out of place here, but I appreciate what you're trying to get at, Bill. I think there's a place for it, because, ultimately, you've got to have some way of getting at all of those acronyms that managers need to have, and, right now, we do that with a stock assessment.

BILL ARNOLD: Okay, and so I want it to be 12, and I want to word it in a way that satisfies both Kevin and J.J., and so let's try to get something down, and I think you were really on it, Kevin, with what you were saying, and I don't remember exactly what it was, but it incorporated ecosystem considerations into stock assessments, or something like that, and I don't know, but I would rather you word it.

KEVIN MCCARTHY: I think that's a good placeholder, at least, what you just said, Bill, because I don't remember what I said.

BILL ARNOLD: Well, now I don't remember what I said. Kidding. Incorporating ecosystem considerations into stock assessments, and then we can work on it, if you don't like it.

KEVIN MCCARTHY: I think that's a good start, but we could work

on it.

JUAN CRUZ-MOTTA: It sounds reasonable to me.

KEVIN MCCARTHY: I don't want to move away from the notion that we're talking about ecosystem stuff here. This is the EBFM TAP, after all, and so I don't want to fall back to, oh, well, we also need to consider stock assessments, but we need to consider stock assessments in the realm of the ecosystem approach and how does that fit in, or does it fit in? I don't know. Maybe it's a goal to figure that out.

BILL ARNOLD: An objective, Kevin, is to have -- For example, an objective could be to convene a working group to determine how we can do this. That may be a stupid objective, but that could be an objective, and I also want to remind you guys that you've got to think ten, twenty, thirty years, and not one, two, or three years. You've got to think long-term on this, because this fishery ecosystem plan is going to have a long life, I hope.

MANDY KARNAUSKAS: I was just going to say that this is a very good thread, and I will just add a little bit to it, along the lines of what Kevin was talking about. Because we're taking an ecosystem approach, it doesn't mean that we have extra levers or dials or powers to change.

I mean, we're still dealing with the same set of fishery management tools, catch limits and effort limits and spatial and temporal closures, et cetera, and so taking the ecosystem approach doesn't change that set of dials that fisheries managers have at hand, and so I think what said as Number 12 is good, and we could expand it a little bit, if we wanted to be more general, and say something like incorporating ecosystem considerations into not just stock assessment and the catch-limit-setting process, but all of those ecosystem dials that are under the fishery management goals.

BILL ARNOLD: You could say incorporate ecosystem considerations into management, or into quantitative management or something like that, to be more general.

SENNAI HABTES: Why not try something more general, where you do something like provide or develop flexible and adaptive fisheries management systems that incorporate ecosystem-based management information, or something in that vein?

BILL ARNOLD: Sennai, could that be a bullet? Could that be an

objective? It's okay if it's not. I'm asking.

SENNAI HABTES: My recommendation would be to make it a goal, rather than an objective, and then move some of these other more specific goals as objectives under those.

BILL ARNOLD: Let's go ahead and get it written down first. Just go ahead and finish that up, the way Sennai wants it, and then we'll decide where we want to put it, but let's capture it first.

SENNAI HABTES: So develop flexible and adaptive management strategies influenced by ecosystems management. Obviously, that's going to need some workshopping, but I think that can be --

BILL ARNOLD: That's okay. Everything does. Okay. Let's talk about that. If you look at it, kind of 10, and definitely 11 and 12, they're all kind of tied together.

ORIAN TZADIK: I think that, under the original intent, a lot of these are tied up to Number 2 as well, and I was just going to suggest that I think this is great, because it's a good conversation, and I think it's worth putting these things down as separate items, but, when we're talking about a lot of this stuff, that was the original intent behind Number 2, which was about ecosystem resilience. A lot of these themes are brought up within there, and so I think, at some point, we're going to have to consolidate this list, but I understand this is kind of more of a brainstorming exercise, and I fully agree with it, and I just wanted to point that out.

BILL ARNOLD: Right, and the question you have to ask yourself is are we going to consolidate this list or is the council going to consolidate this list, and that's why I keep emphasizing that I wouldn't get too down into the weeds on this thing, because there's a lot of input yet to be obtained from at least one, and probably the SSC and the DAPs, and there's going to be a lot of other people chiming in on this, and so we're really just working on the ideas and trying to get our thoughts on paper. They don't have to be perfectly organized, and I think you guys are doing great with this.

ORIAN TZADIK: I just second the motion of consolidating this before having it out for review, just so that our thoughts, what we were trying to get across, is very clear, and there's not a lot of wiggle room, and there's no bullet point that just says like forage fish, and it says what we meant by that.

BILL ARNOLD: Okay. All right. We're going to be done with this in just a few minutes, and that's fine, because we will come back to it, and, when we do come back to it, we will come back to it as the organization of our recommendation to the council, and I think it's more important to have it structured properly than to have it complete, so that the council can follow our structure and we're all very comfortable that this is what a goal is, this is what a, quote, quote, sub-goal is, and we don't have to keep using that word if you don't like it, and this is what an objective is, and so the council, the SSC, the DAPs -- You can build on this, but follow this structure.

That's probably Priority 1, and Priority 2 is getting as many ideas as possible, and so, if you guys agree with that -- If you don't, actually, please speak up. Otherwise, let's keep moving.

JUAN CRUZ-MOTTA: Bill, this is a point that I wanted to make earlier and not the question that you're asking now.

BILL ARNOLD: Go ahead. That's okay.

JUAN CRUZ-MOTTA: The point that I wanted to mention before, and for the record, is I do know that we have to do the stock assessments, and all of that is related to that, because that is what the law says we have to do, but the only thing that I am saying here is, since this is a guiding document with no legal bounds, we have to look at the future and start thinking what alternative we have, or we can propose, to stock assessments. Stock assessments were proposed like how many -- I don't know, Kevin, and correct me here, but forty or fifty years ago?

KEVIN MCCARTHY: Yes, we've been having some version of stock assessments, sort of modern stock assessments, since the 1950s, I guess.

JUAN CRUZ-MOTTA: So, for fifty or sixty years, we have been doing stock assessments, and, in the process, we have learned heaps, and now, in 2020, we do know that we have to start looking for new ways to assess what is out there, and that is not necessarily to do a stock assessment, and so, in summary, yes, we need to keep doing the stock assessments, because that's what the law says we have to do. However, as a group, what I encourage us to do is to look for new ways of assessing our resources, and perhaps what we need is an ecosystem assessment, or an assemblage assessment, instead of a stock assessment.

This is related to the very first question that I asked you,

Bill and the group, is how likely, and how possible, or what would be the mechanism, to change the law, because, as a group, I would urge that we start looking -- Instead of saying, okay, this is the law and then we need to think around the law, and that's fine.

However, I am also asking you to start thinking about different stuff that is not written in the law that perhaps will be more sensible to do, and that's -- I just wanted to leave that clear. I'm not saying that not let's keep doing the stock assessments. However, let's think of alternative ways of assessing our resources that is actually done from an ecosystem point of view. Thank you.

BILL ARNOLD: Let me make a suggestion, and then we're going to go to break, and I would suggest that we add a sub-goal that has to do with identifying and recommending management revisions, or something along those lines, because the council can, through their chair and their executive director, and whoever else goes to the Council Coordinating Committee, and Richard at the National SSC, they can move these things forward up the chain, and eventually they could, if they pass muster, could be taken to Congress, through our legal staff, et cetera, et cetera, and presented to them as potential considerations for revising Magnuson.

It could be another five or ten years down the road, but whatever. We could have a sub-goal that has to do with -- That kind of is a corollary to identify research priorities and identify management revision needs or something like that, and so let's talk about that real quickly, and then we'll break, if anybody has any comments.

KEVIN MCCARTHY: J.J., I think you're right on the mark. I think that we could rework that sub-goal to better reflect the desire to develop ecosystem methods that will move beyond single-species stock assessment and that will enable us to inform management, of whatever metrics they need, and I think that's -- I don't have the text for a bullet, but I think you're right.

I was thinking too in the present, and I think you're right on the mark with let's not limit ourselves that way, but let's develop a sub-goal that is more aspirational, as Bill has said, and the aspiration is to move beyond the single-species stock assessment, and so we might want to phrase it in those terms, but I just don't have the words yet.

BILL ARNOLD: Well, let's work out those words, and then we'll break, and do you want this to be the thirteenth sub-goal, or do you want it to be the bullet right above it?

JUAN CRUZ-MOTTA: I would say Number 13.

BILL ARNOLD: I agree.

JUAN CRUZ-MOTTA: Then 12 can be like our transition goal, like what we hope to achieve while the legislation tells us that we have to do stock assessments, and so 12 will be -- That will be what we expect to achieve during this transition, but, at the same time, Number 13, and you said it -- I forgot, but you said it really well, Kevin, something like to foster the necessary research to move from single-species stock assessments towards ecosystem assessments, or ecological assessments -- The thing is that I don't know what word to use for this multi-specific assessment, we would say, and I don't know.

BILL ARNOLD: Can anybody else help out here?

MANDY KARNAUSKAS: Just a word of caution here that parallels my comment earlier on the data quantity. We still need to be able to track individual species trends, and I agree that we want to look towards ecosystem assessments, but, if we can't track the changes in individual species, then we will not be able to measure the impacts of ecosystem changes on single species, and so I still think that the stock assessment, single-species stock assessment, foundation is very important, and not just because it's required by law, but because, if we can't track individual species, we're going to have a very hard time tracking ecosystem or multiple species.

BILL ARNOLD: Okay. That's a good point.

JUAN CRUZ-MOTTA: Because this is very important, and it's fundamental. Mandy, what we're doing now is identifying a problem of what are the important species, and the stakeholders say, no, it's this, and we're going to do snappers, or we're going to do lobsters, or the managers say, no, we're going to do conch, and that's how we're doing that.

You're totally right in saying that, at the end of the day, we need to be able to say, okay, the ecosystem is changing because we're losing the groupers, or we're losing the snappers, because that means totally different things from a functional point of view, but what I'm trying to convey here is the way that we get at that individual species.

Our research, Mandy, is showing that temporal trends in the ecosystem depends on different species or indicators, if you wish, depending on the place or the region where you are located, and so what I am trying to convey here is that we change the approach, and the approach is as follows.

First of all, we detect whether the whole assemblage changed or not. Second, in which direction that assemblage changed, and, third, what were the species responsible for that change, and so what I'm saying here is not us in this view deciding what are the important species or the important indicators, but it's actually us with the data that we collect from the assemblages identifying which are the species that need attention, right, and so, yes, at the end of the day, we need to be able to say what's happening to individual species, groupers and snappers and lobster.

However, we need to identify those out of what's happening to the assemblage and not like we are doing that, and this is the reason why, when we talk about indicators, that I changed the word "develop indicators" to "identify indicators", because "develop" is more related to that process we are going through now, which is asking the people, the experts, what do you believe are the indicators, and identifying indicators and going through the process of identifying what's happening to the assemblages and identify what are the species that are responsible for those changes.

The data, not only here in the Caribbean, but all across the world, what it is showing us is that those important species are not the same in the western corner of Puerto Rico and the eastern corner of Puerto Rico, and I don't know if this makes sense. Thank you.

BILL ARNOLD: That's fine, J.J., and I don't want to continue this discussion, but this is not where we are right now. What we're really talking about is 12 is sort of operating within the present context, and 13 is sort of developing a future context, but we've got enough -- Now, we'll talk about this more, and it doesn't have to be perfect.

Remember, as I said, it's going to go through other groups, and it's going to change, and so there's no point in getting too detailed about this, and we just want to make sure that we've clearly captured the idea. For now, I want to go ahead and break, and we'll come back at 10:25, and then we're going to dive into the FEP outline, but we will come back to this. All

right. Let's break.

(Whereupon, a brief recess was taken.)

DRAFT LIST OF FEP COMPONENTS (71:39)

BILL ARNOLD: All right. I just messaged that we're going to shift over into the draft table of contents for the fishery ecosystem plan. As with the goals and objectives, this is just going to be a basic outline. Really, what I have in mind for this is, when we go to the council, we'll give them an idea of what we're thinking about with regard to the fishery ecosystem plan.

I expect a lot of input from them, and I would like to point out, and this is very important, that Graciela is the lead on the fishery ecosystem plan, and so I do this in the hope that she will be agreeable to this approach, but, again, she's been assigned as the FEP document preparation lead by the council, and so is this okay, Graciela?

GRACIELA GARCIA-MOLINER: This is great. The more we can get out of you guys, the better. Thank you.

BILL ARNOLD: Okay, and I appreciate that nobody has really had a chance to look this over specifically, but the items that were in the Federal-Register-published agenda are all in here, along with some other thoughts that I had on a possible way to structure the fishery ecosystem plan, and, again, it's very preliminary, and it's hardly complete, but I thought it might get folks thinking and talking. You might want to take a minute to look it over, but please speak up when you want to make comments or suggestions.

KEVIN MCCARTHY: Bill, since this is a shifting of gears, can you explain -- We're moving to the -- How does this relate to what we just did, or I guess that they're different things, but I'm trying to understand how everything flows together here, or fits together, is a better word.

BILL ARNOLD: Okay. That's a good question, Kevin, and so a couple of things. First, and I should have included it, these goals and objectives would slot into Number 1, Introduction and Background, and they would provide the basic framework for the things that are included in the fishery ecosystem plan. They are the goals and objectives of the fishery ecosystem plan, and everything that follows should be designed to achieve those goals and objectives, and so they're tightly intertwined, but,

similarly, they are very preliminary.

I want the council to be thinking about this and have an idea, because they gave us a timeline for completing the FEP, and, to meet that timeline, we need to get started on the FEP and to get started on actually preparing and writing the fishery ecosystem plan, and we need to know what it's going to look like, and this team has to make that preliminary decision as to what we think, what the Technical Advisory Panel thinks, that this fishery ecosystem plan should look like, how it's structured and what it includes.

Then we can take that as a recommendation to the council for their consideration, and, if they wish, they can take it to their DAPs, and they can take it to their SSC, et cetera, et cetera, and that's not our decision to make. The only thing we can do is provide our recommendation to the council, and so does that help, Kevin?

KEVIN MCCARTHY: It does. It helps a lot. It sort of opens up some more questions though about, and we talked about this a little bit yesterday, and I'm still trying to wrap my head around it though, is sort of the roles and responsibilities of this advisory panel versus say where the Lenfest effort fits in, versus -- I know that's not a council operation, but there's an awful lot of -- We've got people on the committee that are wearing multiple hats, and some people, like me, are TAP and SSC, and other people, like Tarsila and J.J., are TAP and SSC and Lenfest, and so we've got a lot of overlap of people, and I'm just trying to keep clear roles and responsibilities of all those different entities.

It sounds like sort of -- I don't know if "review" is the right word, or "participating", and I know that Graciela is the lead on this, and so -- Part of what we're doing fits into this Number 1, the introduction, and I'm just trying to understand. Are we meant to review this, or are we trying to assist Graciela, and I'm just trying to understand what we're meant to do here.

GRACIELA GARCIA-MOLINER: If I may, the idea is, like with fishery management plans, to have a document built for the council for them to provide to the Secretary of Commerce, and this is a non-regulatory plan, as of right now, but it should feed into the regulatory amendments, or regulatory aspect, of the island-based FMPs now.

I think that the council is seeing this more as a source

document, or what used to be called a source document, which is where you put all the information that might be pertinent to management, and maybe not right now, but in the future, and this is something that you had already, and the planning team, and now the TAP, had discussed, at the last webinar, what are the sections of the fishery ecosystem plan that need to be included.

In addressing Lenfest and the ESR and many other ongoing projects that we have now, the main idea of having everyone sitting at the table is that we don't duplicate efforts in one of the basic things that we need to do, and that is gathering the data that is already in existence, QA/QC it, and analyzing it.

One of the main issues has to do with that, because, as you were talking before during the development of the goals and objectives, there is quite a bit of data out there, but it's just that it has been sitting on shelves or in computers for a very long time, and no one has really taken a look at a different approach to analyzing the data, and so, given that, we know that there are all these efforts, but we just don't want for everyone to be, for example, QA/QC'ing all of the SEAMAP data, and that takes a very long time, and I think it's taken J.J. and his group over a year just to get the Puerto Rico data to a stage where it can be used, and so that dataset can be fed into the next group that will be looking at a different aspect of the EBFM.

One of the things that we're doing behind the scenes is we're looking at the goals and objectives of the different groups that are working towards the same goal, to deal with ecosystem out front, and this is something that the stakeholders, the people who go to the council, have indeed been requesting for a while.

Once we have the goals and objectives of the different groups and who is doing what, then that becomes part of the jigsaw puzzle that will go into this. The data and the analysis will be fed into this, and that has, as the main objective, to deal with fisheries management, which is not really the case for any of the other working groups.

They might have a fishery component, but that might not be the end product that they will be putting out, and so we will be bringing all that information into this document, to see how that serves the purpose of fishery management.

KEVIN MCCARTHY: Okay. That's really helpful, but I'm wondering, as we look at this today, what are we meant to be --

What is the role of this advisory panel in developing or reviewing this document, this draft plan? Are we active participants in this? It sounds like we're headed down that path, or are we reviewing it? I know that you're the lead on this, but I'm just trying to figure out what our role is in what we're about to do.

GRACIELA GARCIA-MOLINER: You are extremely active participants in this, because one of the things that is going to happen is that you, as the Technical Advisory Panel, present this to the council, in terms of what you think is the way that the FEP should look like.

KEVIN MCCARTHY: Okay, and so this is the specific role for this committee, for this panel?

GRACIELA GARCIA-MOLINER: Yes. One of them, yes, but yes. Bill, I think we're on the same page, but this will have the scientific and legal background that the council then will use to review the document. I mean, there might be something in here that is missing, from the social aspect of things or from the industry perspective, et cetera, but the idea is that everyone will collaborate with all the chapters into this book.

KEVIN MCCARTHY: Okay. Great. Thank you. That was very helpful.

MARIA LOPEZ: Graciela and Bill, for the FEP, my understanding is that a writing team has to be put together, right?

BILL ARNOLD: Graciela has no writing team to work with. It's just her so far.

GRACIELA GARCIA-MOLINER: And Liajay. But the thing is that that's one of the things that needs to be brought to the council, and so the council then will turn around and ask Roy Crabtree who is he going to appoint to this writing team, and the same thing for habitat, and the same thing for -- Then we're back to what we know as the IPT team, but this is a little bit different, because it encompasses a whole bunch of people from the outside, and so I am hoping, and this is one of the things that we need to discuss, but I don't think this is the time, but most of the people who are involved in this have already produced papers and proposals and work that will be fed into this.

I am thinking that this is going to turn also into a very active group, in a sense, and not in the sense of writing papers

outside this document, but actually feeding the papers that people are writing and putting together into this document, and the writing team is going to be needed, and this is one of the things that the council will talk about when we have the meeting on the 23rd and 24th of June. So, Bill, don't forget to bring that in.

BILL ARNOLD: Okay. So we, as the Technical Advisory Panel, need to guide, or at least advise, the council as to where ecosystem-based fishery management is going to go, and that is going to be -- That direction is going to be developed within this fishery ecosystem plan, and so the reason I want to get some kind of basic outline of what it's going to look like is so they know what a fishery ecosystem plan is, because, if they don't, and they have an understanding of how much effort and time is going to be required to get it prepared, and also so that they understand the components of it, and they can make better decisions as to who needs to be involved in actually preparing the document and what that's going to look like.

That's why I think it's very important for us to be able to take to this council meeting a description, and, in my mind, that description is this table of contents, which is what I'm calling it, so that they can see, right up there on the screen, this is what we are thinking about building, and this is what we are advising you that we would like to build, but we need your input.

Then, again, it's up to the council to determine whether they want any other groups, any other people, to have inputs into this before they give the stamp of approval, and, until they give us a stamp of approval, we can't do too much, but they could say, for example, okay, we want you to go ahead and start on your introduction, and maybe defining the interface and start those, and, while you're doing that, that will keep you busy until the next council meeting, when we can come back and finalize the total TOC, or the total organizational scheme.

Nothing happens instantaneously with the council, and that's understandable, but we need to be able to work with that, and we need to anticipate it, so that we are able to continue making progress while they make decisions.

SARAH STEPHENSON: Bill, I just wanted to let you know that I was chatting with Jocelyn, and she's having problems getting audio, and then, when she tries to call in, she can't, and it looks like Tarsila might be having the same problem, because she keeps bouncing in and out, and so Jocelyn is saying now that the

phone line doesn't work, and so I don't know if you want to -- She's saying there is no computer audio, and she can't call in, and so I don't know if you want to take a moment to see if we can fix that.

GRACIELA GARCIA-MOLINER: Okay, and so can I ask who is Caller Number 2? Kevin, is that you? You're on the phone, right?

KEVIN MCCARTHY: That is me, but I was able to call in first thing, and I've stayed on the line, and so maybe there is some other issue happening now.

GRACIELA GARCIA-MOLINER: One thing that I advise people is that, if you have too many -- Like the laptop and the desktop and the iPad and the phone and everything else connected to the Wi-Fi in your house, that takes away from the signal that you have, and so I usually turn everything off around me and just keep the laptop going. That's number one. Number two, let me go and find out if we have an additional phone number that I can provide for you, and so give me a second.

BILL ARNOLD: Okay. While Graciela is doing that, please look this table of contents over, and then let's start -- Well, first, I would like to know that you agree with the approach. Then, if you do, what your thoughts are and what your additions would be, changes, et cetera, et cetera.

ORIAN TZADIK: Bill, I've got a couple of thoughts.

BILL ARNOLD: Bring them on, Ori.

ORIAN TZADIK: Okay. First, I am wondering if -- Just because you had spoken about the longevity of this document, I wonder if, somewhere in here, we need to include the -- It doesn't have to be like the Lenfest loop or anything, but the idea is that we are following, which do include kind of the re-assessment of the techniques, right, and so I wonder if that's under 2b, and it's not federal guidance, but it is guidance, right, and so maybe just having another bullet there that's kind of other guidance and --

BILL ARNOLD: Not under b. I don't want to do that, because that is federal laws and federal guidance, but I think it goes under 2, and however you want to word it, Ori.

ORIAN TZADIK: Not necessarily reassessment, but just the whole cycle. I mean, we can -- I would say development, FEP development, process and reassessment. Then the other thing

that I wanted to point out is, under this second bullet as well, Vanessa did a good job of pointing out that she gave me something that I am looking at right here, and so, instead of -- Let me get the name right.

I thought her name was Cynthia Arelis, but, anyway, she wrote a much more relevant thesis dissertation, and obviously locally relevant, and so I would like to have that included too, maybe under the local regulations, but this is specifically about the interface between fishery and management, and so just kind of something in there about the local -- I guess local interface between fishery and ecosystem management.

BILL ARNOLD: Okay.

ORIAN TZADIK: That includes a socioeconomic component as well.

BILL ARNOLD: Ecosystem management, Liajay. Yes. Nice. Then what was that, Ori?

ORIAN TZADIK: I just said that, at least in this thesis, it includes a socioeconomic component, and I think that that should be included in there as well.

BILL ARNOLD: Okay.

ORIAN TZADIK: Fisheries and ecosystem management -- Maybe local interface between fisheries, fishing communities, and ecosystem management, and I will defer to Tarsila for wording on that.

BILL ARNOLD: I am afraid that Tarsila may not be able to tune in. Are you there, Tarsila? It looks like Carlos, Tarsila, and Jocelyn are having problems connecting. Is that true? Can you message us or anything?

MARIA LOPEZ: Bill, I have a couple of comments, whenever you have a chance.

BILL ARNOLD: Go ahead.

MARIA LOPEZ: I guess the first question -- So, in the introduction, or not the introduction, but, in Number 2, what you are trying to define in there is how the FEP is going to function, and is that what that whole section means, and the considerations for the consistency, basically, with our regulations? Is that what that --

BILL ARNOLD: That was my thinking.

MARIA LOPEZ: Okay. So that will be where everything is going to be, and so you're saying what is the consistency with the law, federal and local and EFH and ESA and anything that you need to add in there, and then how this FEP is going to function, et cetera.

BILL ARNOLD: For consistency, the word I would use is more likely "framework" within how this ecosystem approach operates.

MARIA LOPEZ: Okay.

BILL ARNOLD: But that's my wording, and you guys can change it.

MARIA LOPEZ: Right. I just wanted to kind of like understand how this is -- What was the idea behind this setup, and so, when you say Number 4, 5, 6, are those supposed to be descriptions? Can all of this be put under one chapter then, and so you're describing what the whole society or the society in relation to the fisheries, the economics in relation to the fisheries? What are we trying to accomplish here? This is just a question.

BILL ARNOLD: It would not necessarily be constrained to the fisheries, Maria. You want to understand how the society operates, to some degree where fisheries fit into that, and then what the societal considerations are with respect to the fisheries, but it's not a -- If we're just talking about the fishery, we don't want to be too constrained, and, as I say, Number 4 on all of these is connectivity, and that is how do these societies connect to one another or not, and to the larger society, the Caribbean basin society, the global society, et cetera, et cetera, economics.

Socially, you could argue maybe that's not a big deal. Economically, it's a very big deal. Ecologically, I would argue it's a very big deal, and so think of how you're going to treat the economics the same way as how you're going to treat the ecology. You're not just going to talk about a coral reef or a coral head. You're going to talk about that ridge and all the way down to that trench, and you kind of want to take the same approach, to the degree we can, for social and economic considerations, but there are things that maybe I've missed.

MARIA LOPEZ: I guess I was just trying to -- I agree with all of that, but I was just trying to put everything under one chapter, and so this chapter is going to be talking about -- This is a description of all of these things, because there is no action in there. You are just describing the information

that you have, right?

BILL ARNOLD: Don't think of these as chapters. Think of them as components. I don't know how we're going to organize it.

MARIA LOPEZ: Okay.

KEVIN MCCARTHY: Bill, I think we don't have a TAP member on this call, and we're continuing to do business, and we don't have legal counsel, and we don't know if the public can get in. I think we need to call a halt until we resolve the problem. We have charged ahead, and so we need to stop.

BILL ARNOLD: Okay. Well, we're missing one member, and we still have a quorum, but okay.

GRACIELA GARCIA-MOLINER: I mean, you can go ahead, because this is being recorded, and the recording is made available in a verbatim format, and, also, if anyone requested, the video conferencing will be available, but I am trying to check on why the phone -- Because apparently the problem is calling in, and so I requested that they call in using Skype, for example, which is a solution to the problem, and so we're working on that, but this is being recorded, and there will be a verbatim transcription of the meeting.

You do have a quorum, and so everyone is online except for Tarsila. I mean, it's true that Jocelyn is not in, but we are not dealing with anything that is of legal concern, and so it's up to you if you want to stop here and go to lunch this early, or you can keep on working, and we will make it available to everyone as soon as possible. Let me know what you decide.

KEVIN MCCARTHY: We don't know if we have a legal concern, because nobody here is a lawyer, but I hate to shut out people who are on the committee over a technical issue. I mean, that's just my opinion, and the group can do whatever it wants.

BILL ARNOLD: What I want you to do is be looking over this table of contents and thinking about what you agree with or what you don't agree with and what changes you would like to make. We're going to be on this for a while, and hopefully we'll get Tarsila back soon, and it will all still be on the screen. Now, if you would like, we can do this in track changes, and then everything will be in front of everybody, so that, when she is able to get back in, she can see what we've done. Is that okay, Kevin?

KEVIN MCCARTHY: I think that's a great recommendation, Bill.

BILL ARNOLD: Okay. So let's do track changes. Forgive me, but a couple of changes were made, and I think we should highlight them, and I think that's what Liajay is trying to do, which she's on top of it, of course. Thank you.

KEVIN MCCARTHY: I think that's important.

STACEY WILLIAMS: Bill, can I give a suggestion? For maybe the conceptual models, maybe moving that to under like present status, either before ecosystem status report or -- Or actually after all of the society and economics and ecology are described.

BILL ARNOLD: Sure.

STACEY WILLIAMS: Also, really quick, Graciela, I think --

BILL ARNOLD: Let her do that first.

STACEY WILLIAMS: This is about connecting, and I just noticed, on my screen, the access number has disappeared, and so maybe it's to do with access numbers. Maybe they have to be reassigned.

GRACIELA GARCIA-MOLINER: I sent them an email with the access codes again, but it says the error message -- The phone number says that the call cannot be completed, as the call party is temporarily unavailable. Because of the phone number being somewhere in the world, they might have an issue, and so I'm trying to chat with the Go to Meeting people to solve that. Thanks.

STACEY WILLIAMS: Thanks.

BILL ARNOLD: Okay, and so, using track changes, something -- We're going to move conceptual models down between ecology and present status? Stacey, is that what you would like, or after present status?

STACEY WILLIAMS: I was thinking either within present status, like either an a, b, or c or --

BILL ARNOLD: I don't want it there. I want it separate.

STACEY WILLIAMS: Or as separate after ecology.

BILL ARNOLD: Okay.

STACEY WILLIAMS: So Number 6. Also, I had another --

BILL ARNOLD: You don't want it under present status, because those are -- You know, ESR, EIA, risk analysis, these are activities that are totally separate from the conceptual model, and maybe I'm not right on this, but I think that I like where conceptual models would be there, because it's sort of setting the stage for these reports and framework documents, but, again, I'm not a dictator here.

STACEY WILLIAMS: Also, in the ecology -- Now, is the ecology going to be describing like the different habitats, and, also, what do you -- I guess it's more of a question, but what do you perceive like the information in the ecology section pertaining to?

BILL ARNOLD: The whole ecological framework.

STACEY WILLIAMS: Okay.

BILL ARNOLD: Then d would establish the connectivity amongst those sub-ecosystems and the broader -- I mean, I'm thinking very generally here, but that's what I had in mind, is how it operates, because, as you know, you could go to an individual fish house at a hierarchical level, and, as I said yesterday, take it all the way out to global, and so, really, it's just talking about ridge to trench ecology and how the system functions ecologically.

That doesn't have to be the way it is, but that's what I was thinking, and, obviously, these things are going to break down, of course, and we don't need to go into that kind of depth right now, and we just want to get a framework for what this FEP would look like and what the main components will be, is my thinking.

JUAN CRUZ-MOTTA: A suggestion for the conceptual models, and what do you think about having some items for the SSC and DAPs and other conceptual models, and then the last item would be the stacked conceptual model?

BILL ARNOLD: That's fine with me. Mandy has more experience with this, and I don't know that she would disagree, but I would be curious to hear her thoughts on it, because I don't know if our conceptual model is just that stacked outcome or if we consider -- I mean, this isn't a summary document. It's sort of an explanatory document, and so let me know your thoughts on

that. I don't know if you don't have thoughts or if you can't be heard.

ORIAN TZADIK: Bill, I am not sure if Mandy -- Mandy, obviously, has a lot of insight into this, but, just with regard to what we've spoken to in the past, and also with her and with some of the other contributors to all of this, I am personally of the opinion that every conceptual model that we do should be in this document somewhere.

My opinion is to have them as appendices, but, I mean, this is more just an idea, and this is a table of contents, and not necessarily for the order of the pages, right, and this is just a table of contents of what's going to be in there, and so I would suggest having a list that all this stuff will be in there and then including the melded model, and then what I was talking about yesterday -- My question that we should talk about as a group at a future date is whether we want to have all of these models in the appendix and then presenting and using the melded and the SSC or whether we're just presenting and using the melded, and then the rest of them are in the appendix, but I think that's for later, and I think, for now, we should just have them all in the list.

BILL ARNOLD: I would also suggest that that may not be our decision completely, and the council and the SSC may want to comment on that, but, on your particular point, Ori, I think, under conceptual models, that a should say SSC, DAPs, and all others, or any others, or something, because we want, as you just said, all the other conceptual models, any other conceptual models developed, and so what do you think?

ORIAN TZADIK: I agree with that.

JUAN CRUZ-MOTTA: I also agree.

BILL ARNOLD: Thank you, J.J. Like I said, we don't have to be too perfect on this, but we just want to capture it.

JUAN CRUZ-MOTTA: Another question, one small question, and another question, or two questions. The first one is, Liajay, is this document in the G-drive?

BILL ARNOLD: Not yet. I just ginned this thing up this morning. We will put it there. Liajay, did you put it in the G-drive? Maybe it's in there. I don't know.

LIAJAY RIVERA: No, but I can do it now with the track changes.

BILL ARNOLD: The track changes is the most important, and this is going very nicely, and you can leave it right here for now, Liajay, and you don't have to worry about that, but we will want it in there, of course.

LIAJAY RIVERA: Okay.

BILL ARNOLD: So this is really good input. Keep going.

JUAN CRUZ-MOTTA: It's just because I wanted to see, down below, if there was an item for the fisheries. It would have economics and ecology, and shouldn't we have an item saying "fisheries"?

BILL ARNOLD: Like between ecology and conceptual models? Is that what you're thinking?

JUAN CRUZ-MOTTA: Yes.

BILL ARNOLD: No. I'm just kidding. That's a great idea. That would be something like 6, Liajay, fisheries would, and conceptual models would become 7. If you wanted to, you could add the four components, and that's up to you guys.

JUAN CRUZ-MOTTA: Yes, I agree with that.

BILL ARNOLD: Okay, and so add the a, b, c, d, the St. Croix, St. Thomas/St. John, and Puerto Rico connectivity. So just a quick aside. Jocelyn, are you able to hear us and speak? It looks like you're not able to speak, but I don't know if you can hear us, and, if you can do a chat. If you can't -- If you have access to the chat, let us know what your status is.

SARAH STEPHENSON: She can't hear anything. She can log in, but she has no audio, and so she would not have heard that request that you just made, and so she could probably chat, but she wouldn't know the question that was submitted to her.

BILL ARNOLD: All right. I think Tarsila is in the same boat right now.

GRACIELA GARCIA-MOLINER: We are trying to solve the problem, but I don't think -- As I said, I think it might be either where they are calling from or where they're calling to, and so I have requested Miguel to call in, to see if that's the problem, but Kevin is on the line, and so that shouldn't be a problem. Tarsila is back.

KEVIN MCCARTHY: I've been on the line since the beginning, and maybe there has been some -- I don't know, but, at the risk of sinking the whole enterprise, I wonder if you don't need to restart on your end, restart the whole thing, so people can log-in at some point. I don't know what the best way is to move forward, but, if we're asking questions of people who are not on the call, we've got a problem.

BILL ARNOLD: Okay. Look. Let me make this suggestion. We're going to break for lunch for an hour-and-a-half. If you guys don't object, we could break from now until 12:30 and try to get this all straightened out and come back at 12:30. It seems like a good time to do it, and so I'm all for that, if nobody objects.

GRACIELA GARCIA-MOLINER: Okay, and so then everyone would have to log-in again when you come back.

BILL ARNOLD: Yes.

ORIAN TZADIK: At what time? At 12:30, you said?

BILL ARNOLD: 12:30, and I know you have to go, Ori, but at least you can come back for a half-hour.

ORIAN TZADIK: That's fine. That's fine.

SARAH STEPHENSON: Can someone text that to Tarsila, so she knows, and I will tell Jocelyn?

GRACIELA GARCIA-MOLINER: I will tell everyone.

KEVIN MCCARTHY: So we're going to restart the whole system?

GRACIELA GARCIA-MOLINER: Yes.

KEVIN MCCARTHY: Okay. I don't know if that will work, but hopefully it will.

BILL ARNOLD: Everybody, until 12:30, just disconnect and reconnect at 12:30, or thereabouts. I will see you then.

(Whereupon, the meeting recessed for lunch on June 2, 2020.)

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June 2, 2020

TUESDAY AFTERNOON SESSION (0:10)

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The Ecosystem-Based Fishery Management Technical Advisory Panel of the Caribbean Fishery Management Council reconvened via webinar on Tuesday afternoon, June 2, 2020, and was called to order by Chairman Bill Arnold.

BILL ARNOLD: This is June 2, 2020, and this is the Caribbean Council's EBFM Technical Advisory Panel, and the time right now is 12:32 p.m., and we are reconvening after a lunch break to address some webinar issues, and, of course, feed ourselves, and so we're back to working on the outline/table of contents draft, very draft, for the fishery ecosystem plan that the council is developing.

GRACIELA GARCIA-MOLINER: For the record, it was a big Go to Meeting outage, and it didn't have anything to do with the local or any of your phones or anything like that, and so there was a big company issue, but that apparently has been resolved.

For the record, also, what you are going to be talking about has track changes, and so, when we started having problems with the audio, everything was done in track changes, and so, anyone who missed it, this conference is recorded, and the video -- Everything that you see on the screen is part of the record, and so people can go back and see what was done.

BILL ARNOLD: Thanks, Graciela. I know Ori has to be off from 1:00 to 2:00, and so I would like to ask him if he has any information that he would like to add, any suggestions, so we can get those ahead of his brief departure. If not, that's okay.

ORIAN TZADIK: Nothing at the moment, Bill. Thanks for asking though.

BILL ARNOLD: Okay. Then I might ask if Jocelyn, who was missing, because she got shut out, if she would like to provide any input to us, before we get back on this. Okay. She may be busy, because Jocelyn has to kind of go in and out. She keeps herself on the webinar, but she may have to jump over for a meeting or something.

JOCELYN D'AMBROSIO: I'm sorry, Bill, but I was just finishing up a different phone call, but I'm here now.

BILL ARNOLD: I asked if there was anything that you wanted to say before we go back into the table of contents.

JOCELYN D'AMBROSIO: Okay. Well, I didn't hear, unfortunately, anything after the break, although I was kind of trying to look at the screen, but just in terms of what I was speaking about yesterday of folks knowing roles and responsibilities and that we're clear on the different elements of what's going to inform the fishery ecosystem plan.

One of the things here, under conceptual models, is I see that there is just reference to some of the work that's already been done by the SSCs and DAPs, and then it says any other conceptual models developed.

From my perspective, I want to make sure that it's clear who is developing these models and how we intend to rely on them and that, if they are initiatives of this body, and initiatives of the council, that they follow all of the process that the council would need to follow, and so that would be they are developed in public meetings, like the SSC has been doing and the DAP and like this public meeting.

If there is any interviews with stakeholders, we're following any necessary process to interview them, but, if it's just that this group is saying that we're intending to rely on outside research, that might be useful to us and inform those models, then that's totally fine too, but it's just is whatever research that's happening a TAP initiative or is it outside research, and just trying to make sure that's really clear.

Then, to the extent -- Like just making clear that any of the Lenfest work actually is conducted as an independent project, so that it can be relied on and brought into this process without someone saying, well, actually, that looks like it was a TAP process that you delegated without following procedure, because we don't want that.

If that were to happen, we might not be able to use the information, and I think we want to be able to use information that this body develops, as well as outside research, and so, again, just thinking about who is doing it. If it's a TAP process, it needs to follow all the requirements of the Magnuson Act and other law.

GRACIELA GARCIA-MOLINER: Bill, if I may, I do have a big question for Jocelyn regarding what we were talking about.

BILL ARNOLD: Go ahead, Graciela.

GRACIELA GARCIA-MOLINER: Jocelyn, so let me give you an example, because this is one of the things that worries me about people doing duplicating work along the way, and so Lenfest and the council and the ESR and the Science Center and other groups.

An example is we have been working with the SEAMAP data, and one of the issues is that many of these datasets are not QA/QC'd or have not been in a very long time, and so the idea is that now, with the institutional memory of people like Aida Rosario, we are working to clean up those datasets.

Lenfest has an interest in using that data, and the council has an interest in using that data for the FEP, and the ESR has an interest of using that data, because it's one of the few long-term datasets that we have available. We are all on the same page of wanting to use the same information, but should we all three independently do our QA/QC, or is it okay if we are sharing the data as it comes online and the results of the analyses that comes out of that clean dataset? This is a real example, and this is happening right now.

JOCELYN D'AMBROSIO: I would have to think about it just a little bit more and get back to you, but I definitely understand wanting to make sure that you're not duplicating efforts, and that, to me, seems like this QA/QC -- They can happen offline, outside of meetings, and then the results of that discussed at a public meeting, but I need to -- Maybe we should chat about that and just think about what that would look like and what information was shared and make sure we have confidentiality issues that are being -- That we're mindful of and things of that nature, but, yes, that's the type of question that I'm thinking about.

If there are different groups that are trying to answer the same questions, making sure it's dotting all the I's and crossing all the T's with process. What I was thinking about with the conceptual models if the TAP process is saying, well, we were going to have this group do a conceptual model, and this group do a conceptual model, and the second step was to create a consensus model, then is that the TAP's role to create the consensus model?

If that's the TAP's role, then the TAP should do it. If the TAP is outsourcing it, either to a sub-group of the TAP, then that would need to follow the legal process needed there, and so public meetings and following Paperwork, but, if some

independent researchers were saying, hey, we see that you're doing this, and we created this information, would you like to rely on it, and then that's discussed at a TAP meeting, then that would be -- That would probably be okay, and we could say, well, yes, we looked at what you did, and it seems good and useful, and we're going to try to incorporate it here, and so, again, it's discussed at the public meeting.

In your example about sharing this data and doing the QA/QC, if different groups are doing it, and then you bring it back to this meeting and say we have this data, and we followed this QA/QC process, that would probably make sense, but, again, we can talk a little bit more about those logistics offline.

GRACIELA GARCIA-MOLINER: Okay. Great. Thank you.

KEVIN MCCARTHY: I would just like to add something about -- Jocelyn mentioned it a bit, but some of these data that are being supplied to various groups are confidential data, and we're going to have to be careful of that, because there are consequences to sharing those data inappropriately.

As I send out data to folks and make it available to different groups, don't be offended when I say, hey, these are confidential data and be very careful about who gets to see it and that sort of thing, and so there's a whole array of rules that we've got to follow, and, if you're the recipient of confidential data, you've got to follow them too, and, I mean, everybody signs a non-disclosure agreement and all of that, but this is just a reminder, as we're talking about data issues and procedures, and I just wanted to throw that out there.

BILL ARNOLD: I would assume, and maybe wrongly, that you're not just providing confidential data to anybody, and maybe SERO, or maybe the council, but you wouldn't provide me with confidential data, right?

KEVIN MCCARTHY: No. Right. What I'm concerned about is I'm only providing confidential data to folks who have a non-disclosure agreement in place with the Science Center. What I am saying is, as we're all talking about sharing data, those of us who have access to confidential data need to be mindful of who gets to see it and in what form they get to see it, because, just because it's confidential, it doesn't mean that I can't make it non-confidential.

If I group it in a particular way, everybody can see it, but there are rules to follow for that, and so I don't want to get

into a whole bunch of procedural stuff here, and the topic came up, and I just wanted to put it out there, because I do think it's important to share data, and the fishery-independent stuff, to the best of my knowledge, that's usually non-confidential, even though it's very detailed, but it's the stuff that's reported by the fishers that's confidential, and we've got to be careful of that.

BILL ARNOLD: This struck me earlier, but one of the components of the -- In fact, it was yesterday, but the components of the Lenfest project that was discussed was doing surveys, or interviews, or something like that, and, now, they don't have any type of Paperwork Reduction Act controls on them, but we do, as a council entity, I'm pretty sure, and I just want to make sure that we're as careful there as we are with the data and with the attributions and with the allocations of effort, et cetera, et cetera, and Jocelyn may want to comment on that too, and then we'll get back to this outline.

JOCELYN D'AMBROSIO: Thanks, Bill. That's one of the things that I want to make sure we're following. Like, when I talk about process, the requirements under Magnuson to have public meetings, and then there's other requirements that apply to councils and their advisory bodies, like some of the Paperwork Reduction Act.

I don't know all the ins and outs of when those apply, and so we would need to look into it, if it was a TAP initiative, and then that's where we don't want it to look like the Lenfest initiative is a TAP initiative, if it's not, because then there would be additional process associated with it, and so that's where we would want to be clear of like what does the TAP need and what is the TAP trying to put together. Whatever the TAP needs to do needs to follow that process.

Outside researchers that are just outside researchers, they can do their research however they want and give that to the TAP, and the TAP might be able to say this is interesting, and we agree, and we would like to rely on it, but I think there's a difference between relying on outside research and delegating to someone else to do that research, and it's in between those, what is delegating and what's relying on what someone else has done, where we need to be careful, because, if it bleeds over to look like we've delegated, then I think would bring the project under those procedural requirements, and so that's why I was speaking yesterday about having those clear boundaries, both so that we don't duplicate efforts and so we know that everyone is clear on who is doing what with what hat on, and then so that we

can use the results of that process.

What I am trying to avoid is for someone later to say that this looks like a delegation of council responsibility to this entity, and this entity didn't follow proper process, and so you can't rely on the results. I think that would certainly be the worst-case scenario, and so how do we structure our goals and things like that to make it clear that it's really just trying to bring together all of the research and put it into a plan to inform management, as opposed to maybe assigning outside tasks, and so, if there's a way to make that clear, I think that would be really helpful.

ALIDA ORTIZ: I would like to make a question to Jocelyn, because this relates, I think very much, to what I said yesterday when speaking about a stakeholders approach and that I didn't think it was good to go from one from one side and one from the other side and asking the same thing and then it ends up in a mess, but that means that, if I were with Tarsila in the Lenfest project, but I am from the TAP, and I am from the Outreach and Education Advisory Panel of the council, how do we work that out? Do we have to get authorization from the council before working with any stakeholders?

JOCELYN D'AMBROSIO: I think, if you were working in your role as a council staff, as well as part of the Outreach and Education Advisory Panel of the council, then it becomes a council initiative, and so you have to make sure the council supports that work, and I think they do, but just to make sure they're clear that, yes, they would like you to proceed to do this work, and then, when you're having those stakeholder meetings, I think they would need to be public meetings.

Then, because you're trying to do two birds with one stone, to support Lenfest and to support this TAP project, I think then you have to make sure that all processes follow -- So any questionnaires that you put out follow the Paperwork Reduction Act, if that's required, and I would have to look into that legal question, but that would be a question.

I see what you're saying, that you don't want to duplicate efforts, and you don't want to convene these two groups twice and ask them the same questions twice, and so then, if that means that you're doing it as part of a council initiative, then it has to follow the council process.

ALIDA ORTIZ: Okay. Thank you so much, Jocelyn.

JOCELYN D'AMBROSIO: Thank you.

JUAN CRUZ-MOTTA: Just for the record, my understanding is that the Lenfest project is an independent research project. When designed and proposed, it took into consideration the needs, the regional needs, but, as I see it, and Bill or Tarsila or Stacey, please correct me if I'm wrong, but, when proposed, it was conceived as an independent project, but it will provide information that can be used by whoever wants to use that information, including the TAP panel. Thank you.

JOCELYN D'AMBROSIO: Thanks, J.J. I definitely understand that that's how it was conceived as independent, and, just like researchers might try to do research to inform management on a whole host of questions, to say we think that providing this information might be useful for management, and so we're going to undertake this independent process and provide it, what I'm concerned is the way that maybe this group is structuring its goals and objectives kind of brings it under and makes it a part of the council process in a way that blurs those lines, both because the principal investigators are on this Technical Advisory Panel as well as just the way the goals are set up.

If there's a way to clarify some of these goals, to say it's not that we've delegated this process to the Lenfest, but it's that we're going to rely on this independent process to inform our process, and I think we just need to make that distinction really clear.

With what Alida was speaking about, she's saying the council was going to prepare additional conceptual models, and you're saying Lenfest was going to prepare additional conceptual models, independently, but, if you're going to do them together, then that independence is lost, and that's where the council is saying, well, we're doing this for our process, but we're doing it at the same time you're doing it for your process, and then you've kind of mushed them together a little bit more, and that's when you have to make all of the council processes work, and so all of the public meetings and following any other law.

JUAN CRUZ-MOTTA: Jocelyn, what would be your suggestion to state that clearly in this document, and I don't know. I'm totally ignorant on legal issues, but would a disclaimer at the end of the document do, like repeating what I just said before? I don't know, Jocelyn, and what would be your suggestion to go about it with this?

JOCELYN D'AMBROSIO: I was thinking, and I was chatting with

Bill a little bit, or trying to brainstorm on some of these issues, and like we could say that one of the overarching goals is to build on ongoing research or to incorporate findings from independent researchers and sort of state it that way, maybe as sort of an overarching thing, so that we don't sort of add too much verbiage to these goals and objectives, which I understand are trying to be clean.

When you say stack conceptual models, I just don't want it to look like that's an act of this group, but then we sort of delegate it to Lenfest, but, if you say you're building on the models that this body and the council has worked on, as well as any -- I think that's what Bill was getting at, any others that are developed, you might say like as well as any others that are developed by independent researchers, and then you're sort of clear that those other processes were independent.

I just think, in terms of nuts and bolts though, to the extent that you are trying to do that one meeting that would inform both Lenfest and the council, then you're kind of both piggybacking on each other and that it would need to follow the right process of the public meeting and all of that, but, if you were to hold an independent just Lenfest only, and the council wasn't kind of either helping or sitting in, then I think that would be fine, and so then you would have to conduct those meetings separately.

The council would have its own process to develop an additional model, and you would have -- You would maybe do that yourself, and then you could compare those results. Like this body could compare the results of those two separate processes, but it would be clear that they were separate processes.

That's more for nuts and bolts of how to conduct that meeting with stakeholders. In terms of this document, I think just maybe even having something at the beginning that says these items don't necessarily reflect stuff that the TAP is going to do itself, and we might build on existing research, or ongoing research, or incorporate other findings, and maybe that's the way to do it.

BILL ARNOLD: I want to do a practical example right now. Could you go down to 7, please, Liajay? All right, and so 7a is -- We could say, and I'm not sure we have to, and I'm curious as to Jocelyn's input, but SSC, DAPs, and other conceptual models developed under council auspices or something like that, and that's a thought.

We could, Jocelyn, use other conceptual models, for example one prepared by Lenfest or one prepared by the University of Oregon. What you want to avoid is us driving that process and not using those outcomes, and is that correct?

JOCELYN D'AMBROSIO: Yes, that's right, and so, if you said --

BILL ARNOLD: So we could leave it this way, and it would actually be okay, but we just have to mind our Ps and Qs on how those conceptual models are developed.

JOCELYN D'AMBROSIO: Yes, and I think you could -- Right here, like under council auspices or created by independent researchers, and it's just so that you're sort of like planting a seed that it's not that you're trying to control the process, but you're just trying to bring in information, whether it's information you created or whether it's information from outside researchers, and I think maybe even just planting those seeds, because of how close everyone is working together, I think is helpful in this situation. I agree that working together is helpful, so that you are sharing best practices, but, again, you just want to make sure those lines are clear.

BILL ARNOLD: All right. So, to help us out, would you please assist Liajay with wording and the way you think it should read, and I know it's got a long way to go, but this is instructional, as much as anything, for us. If you want, you could break that down into sub-components, like i and ii, whatever you think, but just that's an option for you.

JOCELYN D'AMBROSIO: I think maybe having two -- Like an a and another b, or you do i and ii, and it doesn't really matter, but you could have the council ones on one line and then another line for conceptual models by independent researchers, and so it could be SSC, DAP, and other council body conceptual models.

BILL ARNOLD: Okay.

JOCELYN D'AMBROSIO: That's great. Then you could have "any other conceptual models", and then the rest of that sentence works. Any other conceptual models developed, or maybe take out one of the verbs, either "created by" or "developed".

BILL ARNOLD: Get rid of "created" or whichever. I don't care.

JOCELYN D'AMBROSIO: Developed by independent researchers.

BILL ARNOLD: Okay, and then I don't like c, because c is

active, and it states that apparently we are going to stack the conceptual models, and I can't promise that. I would say "stacked" conceptual models, and so they're stacked, but we're not claiming that we did it or anything along those lines. Your comments, Jocelyn?

JOCELYN D'AMBROSIO: Is that just a type of conceptual model?

BILL ARNOLD: That's taking all the conceptual models and stacking them on top of each other to derive an integrated model.

GRACIELA GARCIA-MOLINER: It's a way of analyzing the various conceptual models that we'll have available.

BILL ARNOLD: It's a process.

JUAN CRUZ-MOTTA: By that, it's one of the objectives of the Lenfest proposal, and now I see the point that Jocelyn was making.

BILL ARNOLD: Yes, and so key here is, just because the Lenfest research group is doing this, it creates no obligation on the part of the TAP or the council or the SSC or anybody else to use that approach, and certainly J.J., Tarsila, and Stacey have every freedom to do that, but it creates no obligation on our part, and that's why I'm careful with the stacked component, is that it's clearly stated.

Even if this is just the table of contents, I want this, as much as anything, for us going forward and understanding this distinction, I want this to be worded correctly, and I don't think it is.

JOCELYN D'AMBROSIO: I think you could -- Stack conceptual model, even though "stack" is a verb there, it's like kind of the noun, or adjective even, describing the conceptual model, and so you could say the stacked conceptual model -- You could leave it stack conceptual models, and then, again, just clarify that it's either prepared by -- Whether it's the SSC or this TAP or --

BILL ARNOLD: How about "under council guidance", Jocelyn?

JOCELYN D'AMBROSIO: Under council guidance or by independent researchers, and that then would allow you to say, well, we agree with the Lenfest stacked model that you evaluate in a public meeting, and they you can --

BILL ARNOLD: Okay. I didn't mean to get too much into the weeds, but I thought it was important to get instructed on this, the careful path we need to stay on, so that we don't get ourselves -- Because the potential outcome of this is we can't use the information, because we didn't properly address it, and that would not be good. I mean, we wouldn't want to rule out utilization of Lenfest outcomes because we screwed up in stating how we were going to -- We made some verbal mistake, or text mistake, and created a legal problem.

JOCELYN D'AMBROSIO: Right. Exactly. That's what I was trying to avoid, just so that -- It's not that you're delegating this to Lenfest, but it's that Lenfest is doing this, and you think it might be informative, and so you'll evaluate the results and decide whether or not to use it at the appropriate time.

BILL ARNOLD: Okay. Thanks, Jocelyn. That's a big, big help. Okay. Let's dig back into this thing. Any additional thoughts or contributions, please, into the table of contents?

KELLY MONTENERO: Just a thought on Number 8, if we haven't discussed it yet, because it's the status of ecosystem status report. In line with what Jocelyn was saying, I'm just making sure that we're careful about the phrasing, in that the TAP is not delegating the SEFSC to create an ecosystem status report, but we'll be using, and, Jocelyn, feel free to wordsmith this one as well, but just, again, making sure that we're careful about hopefully getting it used, but not making it sound like it's a direct product of this panel. I'm just thinking about how we can be careful about that, to make sure that we're avoiding the same problems as the problems previously discussed.

JOCELYN D'AMBROSIO: Thanks. I think you could maybe write, on the ecosystem status report, just who is doing it, and so you could even write "prepared by the Southeast Fisheries Science Center" there, just so you're clear that, all right, we're going to present the status, but we're going to be relying on this outside work product.

KELLY MONTENERO: Thank you so much. Yes, that sounds like an easy way to clarify where it's coming from. Thank you.

JOCELYN D'AMBROSIO: Thank you.

BILL ARNOLD: My only concern, Jocelyn, is we could do this for everything, because, really, the TAP doesn't create anything. We just utilize and integrate, and --

JOCELYN D'AMBROSIO: Those were the ones that were sort of jumping out at me, just because of the similarity of the players, but we discussed, and I think J.J. asked, and you and I have chatted about this, but is there a way, at the outset, to note this, and I think you could just sort of say this is the information in this plan that we want to present, and we intend to rely on the best available science, including work of other researchers, just something like that, which is obviously implicit, but I wanted to make it explicit in a couple of these examples, just because of the potential to perceive overlap, or the potential to perceive a delegation of responsibilities, and those were the ones that jumped out at me, but, yes, I understand that all of this -- Like, on the ecology, you're not going to write the ecology of St. Croix as described by such-and-such paper, or this researcher, and obviously you're able to compile that research and describe the ecology.

BILL ARNOLD: Properly referenced though.

JOCELYN D'AMBROSIO: Right. Exactly.

BILL ARNOLD: In the document itself, we would be referencing, as we would with any other scientific paper.

JOCELYN D'AMBROSIO: Of course.

BILL ARNOLD: We're not just going to put this stuff in there, and so --

GRACIELA GARCIA-MOLINER: If I may, under present status, I think that an a should be a review of what's available, because I think that that's going to be different than what the ecosystem status report is going to do. I think they're going to have their own guidelines to follow, versus a literature review of what is available, for example the basis of yield for the U.S. Caribbean platform or something like that, that we've been talking about, and that's also included in the EFH reviews, because they do deal with ecosystems, per se. Probably, under 8, there should be an a that is the review that we will be doing for this work, I mean, if that's okay with you, because I think that that's where our difference will be.

BILL ARNOLD: Okay. I'm all in.

GRACIELA GARCIA-MOLINER: So review of ecosystem work in the U.S. Caribbean or something like that.

BILL ARNOLD: Okay, and so mentioning EFH, Graciela, reminded me that we've got social and economic and ecology, and do you want a habitat, or would you put that under ecology? I am asking the team and everybody, and I'm just looking for input. I would think it would go fine under ecology, but maybe not.

JUAN CRUZ-MOTTA: What was the question?

BILL ARNOLD: I asked if -- We've got a category, a Number 4, of economics, and we've got a Number 5 of ecology, and we've got a Number 6 of fisheries. Do we need an identical category that would be habitat? It could go under ecology, but you guys may want it pulled out for specific consideration.

JUAN CRUZ-MOTTA: My suggestion would be to leave it in ecology.

ALIDA ORTIZ: I agree, also. The moment you get into habitat, they have to break it into so many spaces, and there is always a discussion of whether it belongs here or it belongs in the other place, and I think ecology is a wider concept that has in it the habitats.

BILL ARNOLD: Okay. Another thing we'll want in here -- Like 11 is blank, and we will want something that is an integrative section, where we take all this and put it together, and whatever you want it to be, management guidance or management strategies or whatever, but we should have something like that, and then we would have a Number 12, among other things, potentially, that would be, I think, research needs, or something along those lines, and I don't know that we -- We talked about research needs, but I think that was over in the goals and objectives and not here in the actual table of contents. I'm looking for comments.

GRACIELA GARCIA-MOLINER: Can you repeat the 11 and 12, because I didn't --

BILL ARNOLD: 12 is easy. The last thing would be research needs, right, Graciela, and we will have a section on research needs, and that will be our last -- I would assume, and, I mean, it might even be an appendix, but we definitely want it in there.

GRACIELA GARCIA-MOLINER: But, before that, you said something else that wasn't research needs.

BILL ARNOLD: No, and it was an integrative section. How do we put all this stuff together? Is it management strategies that

come out of this, or maybe not, and I don't know, but there should be some sort of summary section that says, okay, here's what we learned, and here's how we can use it, or something along those lines.

GRACIELA GARCIA-MOLINER: So how about ecosystem management?

BILL ARNOLD: All of this is not set in stone yet, and so at least we've got it there. How about ecosystem management applications?

GRACIELA GARCIA-MOLINER: All right.

BILL ARNOLD: Is everybody okay with that? I think everybody might want to chime in on that, because this is important. This will be the section where we influence, or at least try to influence, how the future goes with the council, or the council tries to influence themselves on where they go.

SENNAI HABTES: What about coordination of ecosystem approaches to fisheries management in the U.S. Caribbean?

BILL ARNOLD: Thanks, Sennai.

SENNAI HABTES: Just, again, Liajay, coordination of ecosystem approaches to fisheries management in the U.S. Caribbean.

BILL ARNOLD: Okay. So we've gone from start to finish, but that doesn't mean that we have everything in there in between, but, hey, I think we've done a pretty good job of getting a pretty draft table of contents together. We don't have to be done, and certainly, if you guys want to have more input, let's have it, but I do feel like at least we've gone from an introduction to a research needs type of summary, and, again, it's just a draft, and there will be a lot of additional input into this, including additional input from you guys, and this is not the last chance you'll get. It's the first chance, but, right now, if there's anything else, then let's hear it.

JUAN CRUZ-MOTTA: I think it's looking good, because all the components of the Lenfest loop, the protocol, and remember we were using that as a guide, the where are we now, where are we going, they are all implicitly considered in this plan. Like, for example, Points 1 to 7 could be considered where are we now, and where are we going could be a -- A quick question, Bill. Shouldn't the goals and objectives be part of this document?

BILL ARNOLD: I did say that, but I guess we didn't add it. Oh,

there it is.

JUAN CRUZ-MOTTA: There you go.

GRACIELA GARCIA-MOLINER: Do you want the paragraphs in there also already?

JUAN CRUZ-MOTTA: That is already included, and then Step 3 and 4 and Points 7 and 8 to 11, and then we made the Point 12, and so I think it's looking good, Bill.

BILL ARNOLD: All right, and so I have a suggestion. Go ahead, Graciela.

GRACIELA GARCIA-MOLINER: Fisheries regulations and fisheries management, under fisheries on a separate section or by island?

BILL ARNOLD: You mean the actual stuff that's in place now?

GRACIELA GARCIA-MOLINER: Yes.

BILL ARNOLD: I would have that in the introduction, and we want to lay out a background. This introduction and stuff, we want to get everybody up-to-speed on the history of management, and we don't have to put all these sub-sections in, and we could. The history of management, transitioning from Caribbean-wide to island-based, and these are the -- Because the first thing you want to do is bring your audience up to speed on where we've been and where we are.

That sets you up for where we want to go, and you always have to look at this as if somebody is reading it who has no familiarity with the region or fisheries management or ecosystem management in the region, but that's all up in 1 or 2, is my opinion of this, Graciela, and what do you think?

GRACIELA GARCIA-MOLINER: Well, the only reason why I bring it up is because it's one of the main components in many of the conceptual models that we've looked at now, effective fishery management, fishery management, fishing regulations, et cetera, and that appears to be one of the main components within fisheries, and so --

BILL ARNOLD: We can put it there, but let's get it. Tell Liajay how you want it, and let's get it in there.

GRACIELA GARCIA-MOLINER: So fisheries regulations, and then we can move it around. I mean, I was thinking whether it should be

by island, because we have had --

BILL ARNOLD: Yes, Graciela, it will be by island. It will be by island. I mean, you could put it in under each one if you want to, and that's fine with me, and I don't care, but the point is -- Yes, that would be a sub-topic, but that's not the whole topic. Fisheries for St. Croix is not just the fishery regulations. There you go.

GRACIELA GARCIA-MOLINER: Perfect.

BILL ARNOLD: Then 2 could be whatever else. Okay. So here's the thought that I had, kind of feeding off of what J.J. was talking about, and we don't have to do this, but we could, at least on this draft, include that Lenfest cycle at the top of this thing, and then have each section identified as to which component in the cycle, just what J.J. was talking about, and maybe this is overkill, and I'm fine if it is, but I think you guys see where I'm going with this, and let me know what you think.

GRACIELA GARCIA-MOLINER: Do you want to physically move it over here?

BILL ARNOLD: Physically drop the cycle, as a suggestion, up there in the top, so that it is a reference illustration ahead of this.

GRACIELA GARCIA-MOLINER: Okay, and so we have to open J.J.'s presentation and --

BILL ARNOLD: We don't have to do this. First, we have to make sure everybody thinks it's worth doing. Maria, go ahead.

MARIA LOPEZ: I think that's a good suggestion, because I was looking at the loop right now, and I feel like Number 3 and Number 4 on that loop -- There are still some things in there that can be incorporated into the plan, especially the part of how will we get there and identifying potential management strategies and kind of more like a plan, and I know that's incorporated into I think 11, but maybe if we all take a look at it some more, ideas can come up, because, to me, that's very important, because that's where the management guidance is going to -- That's going to be provided for the managers, for us.

BILL ARNOLD: Okay, and so I would say that, when we have this thing in a document, the Lenfest loop isn't going to be at the top, but, for now, it might help us to further flesh this thing

out if we had it to look at, and I don't mean necessarily flesh it out today, but, as people are thinking about this and thinking, wow, I would like to add this, and we should have changed that wording of whatever, but I'm anxious to hear from the team and from all the attendees as to what they think on this.

In the meantime, I would say, real quickly, Liajay, you can go ahead and clean up the highlighting and accept the changes and stuff. Everybody has seen it. So what do you think about adding the loop?

JUAN CRUZ-MOTTA: I think it would be -- Based on Maria's comments, I would say it's a very good idea, because then it would allow it to include things to strengthen Number 4 and Number 3 that Maria just mentioned, and a few more items could be added in that regard.

BILL ARNOLD: Okay. Anybody else? Go ahead, Alida.

ALIDA ORTIZ: Where would you put it? In the introduction and background or in the interface between fisheries and ecosystem management, somewhere in that second section?

BILL ARNOLD: Personally, I would put it in between the line that says, "very draft table of contents" and "introduction and background". That would be --

ALIDA ORTIZ: That would be like a presentation, and like that is not here anywhere, when you say --

BILL ARNOLD: It's really to help us to make sure that we're being complete in our consideration of these topics. It doesn't have to last. Go ahead.

MARIA LOPEZ: I just meant using it for reference, like for us.

BILL ARNOLD: That's what I mean. Right. It's just up there for reference. Even, when we went to the council, I would probably present this, and I would not necessarily have that on the table of contents slides. I might have it on a separate slide ahead of it, but I'm just really thinking, for this group, to have it for reference now and until we feel like we're ready to -- Well, I don't know. Whatever you think. Then maybe it's a bad idea, and I don't have a problem with that, or maybe it's just unnecessary at this point. Does anybody object to doing it? Liajay, when you get a chance, would you drop it in there, if you can? I don't know how easy that's going to be.

GRACIELA GARCIA-MOLINER: You can steal it from J.J.'s or Richard's presentation. I am sorry to ask this, because I am trying to remember if the original source of that image is the Lenfest program, per se, or if it's coming out of one of the papers from Phil or Essington or one of them.

BILL ARNOLD: If we do anything with it, we'll have to reference it. We'll have to reference the Lenfest document or something, and we can't just plop it in there.

JUAN CRUZ-MOTTA: Graciela, it's in both documents, in the report and in the paper.

GRACIELA GARCIA-MOLINER: Thank you.

BILL ARNOLD: Very nice. Then, instead of saying "for reference", we could actually put -- We could reference the appropriate document in those parentheses. I doubt we have that reference right now, but we would want to get it in there before this goes to the public in any way. Liajay, it looks like you cleaned it all up, too. Did you do that or --

LIAJAY RIVERA: I'm sorry?

BILL ARNOLD: Did you get the highlighting and track changes stuff accepted?

LIAJAY RIVERA: Yes.

BILL ARNOLD: Very nice. Okay. You might want to -- That's all right. We've got "draft" up there, but I just like to emphasize that it's a draft. I don't want anybody thinking that we're getting ahead of ourselves on this. Okay. If we don't have any more input on that right now -- Go ahead. I hear somebody talking.

SENNAI HABTES: Bill, I have a question. Since we're talking about the introduction, I feel like maybe we should put some more into that component.

BILL ARNOLD: So do I. I agree with you 100 percent.

SENNAI HABTES: I think we need to have like a purpose or action and needs listed in there.

BILL ARNOLD: We just determined purpose and need.

SENNAI HABTES: Yes, probably before goals and objectives.

BILL ARNOLD: Put purpose and need. Perfect. Okay.

SENNAI HABTES: I think we also need to summarize like the approach to EBFM or ecosystems-based fisheries management, or explain or describe the approach.

BILL ARNOLD: Yes, and so that would be where like the NOAA policy goes and the --

SENNAI HABTES: Correct.

BILL ARNOLD: That's a great idea. We'll do that.

SENNAI HABTES: Then I think you need an introduction to the plans management approaches, and so describing the organization, like the council, the panels, groups, management objectives, boundaries, species, that kind of stuff.

BILL ARNOLD: Yes. anybody have anything else? I mean, there will be more. The introduction and background will be a pretty extensive document, in and of itself, and that's one we should probably get started on, to tell you the truth, and I think we can add more, but it doesn't have to be exhaustive and totally complete, but it's good to have these things in there that helps the council understand where we're going with our introduction and background.

All right. Before we leave this, I want to go through each one, and everybody look at it and see if they have anything to add. We just did 1, and I also want to ask if you want to subset these under the components of the loop, or do you think we're fine where we are? Then we're fine where we are.

Okay, and so 2 is defining the interface between fishery and ecosystem management, and does that seem complete enough for this draft? All right. Society, economics, ecology, fisheries, and these are all pretty much the same, except ecology is habitat.

GRACIELA GARCIA-MOLINER: Can we go back to that Number 2? We want to make sure that, under federal law and guidance, or other local regulations -- I mean, one, the St. Thomas DAP, for example, thinks that those agencies that regulate water quality and things that get dumped in the water and everything else that have really a lot to do with the marine environment, that they have to come to the table at this stage.

Is that -- You already have it under what is meant by other federal law and guidance, or local regulations or something, and so do you know what I'm saying? It's that St. Thomas is going to have a specific meeting to deal with this.

BILL ARNOLD: So I think we could have an i and an ii there, because there are other federal laws that NOAA has to abide by, and Maria knows them, and then there are other agencies that are federal that are totally separate, like Fish and Wildlife and EPA, and so I think those are two separate things, and so I think you're absolutely right, Graciela, and I think we should capture that right here.

GRACIELA GARCIA-MOLINER: So the Department of Agriculture, and, I mean, St. Thomas basically listed every one, the waste management agencies, et cetera.

BILL ARNOLD: Liajay, make the first one other NOAA obligations, or something like that, and the second one can be other federal agencies, and, if you want to put some examples in parentheses, that's fine, and so what do you think about that approach?

GRACIELA GARCIA-MOLINER: As long as we -- Because I'm thinking in terms of all the CMS that they have already developed, and I am thinking back to precisely this one, and I think it was one of the top in each of their models.

BILL ARNOLD: All right, and so what you want to write in those parentheses is --

GRACIELA GARCIA-MOLINER: Department of Agriculture and Waste Management.

BILL ARNOLD: Put "for example", because we're not going to try to capture them all, then U.S. Fish and Wildlife Service, U.S. FWS, EPA. Put an "e.g." at the beginning of that. I don't want anybody to be offended because they got left out.

GRACIELA GARCIA-MOLINER: Thanks.

BILL ARNOLD: Nice. Okay. Anything else on Number 2? All right. How about 3, 4, 5?

MARIA LOPEZ: I would just change the order of where you have local regulations, and you have the FEP development process and reassessment before that, and I think maybe just switching it, because you're talking about regulations and then -- I believe

that the last thing that you want to talk about is the FEP in there, right, or before local interface. Then just to make clear that what we're doing in this section is the description of who has authority in what, right?

BILL ARNOLD: That and what other -- Like the Magnuson-Stevens Act would talk about the components of the act that influence or are influenced by the ecosystem approach and the constraints on doing an ecosystem approach, like you have to have single-species ACLs and things like this, and you need to talk about that upfront, and that's what that part is.

That would -- It would kind of gradually phase from the laws and regulations that govern this that we have to be attentive to to other factors and other considerations and then ultimately how they blend into the FEP development process and reassessment, and so I don't disagree with you, Maria, and I don't consider it a big deal, but the FEP development should be the last one in this list, but that's fine. It's not a big deal, because this isn't anything but a draft, but we can do that.

GRACIELA GARCIA-MOLINER: So one more, and that doesn't have to -- It really goes beyond the regulations, and so I think that we need to deal with jurisdictions.

BILL ARNOLD: Do we want to do that up in 1, the introduction and background, or do you want to do that here? I will go with either one, and I don't have a problem.

GRACIELA GARCIA-MOLINER: I would go with 2, because that has a lot to do with -- I mean, there are fishing regulations in other jurisdictions, but I think that -- So, even before the FEP development, it has to go up there. So c is jurisdiction, and everything else moves down.

BILL ARNOLD: I might make jurisdictions a.

ALIDA ORTIZ: When you say local regulations, isn't that the same thing?

GRACIELA GARCIA-MOLINER: No. Jurisdictions includes other federal jurisdictions, and that would include the Coast Guard and the Department of Interior and also -- So jurisdictions in general, because it would also go into the local jurisdictions of the East End Marine Park in St. Croix or --

BILL ARNOLD: I suggest we make that a, because you want to lay that out before you start talking about --

GRACIELA GARCIA-MOLINER: Thank you. Good idea.

BILL ARNOLD: Okay. I am going to try this again for 3, 4, 5, and 6. These four sections are huge, and we're not going to capture everything, and we don't have to, and so, if you're fine with it, I'm fine with it.

TAUNA RANKIN: I know you're not trying to have an exhaustive list of federal agencies, but I think that the Army Corps of Engineers is an important one not to forget under other federal agencies up at the top.

BILL ARNOLD: Again, in that parenthetical list in there, Liajay, you can put "ACOE", after the Coast Guard.

BILL ARNOLD: All right. This is good enough for government.

TAUNA RANKIN: Just I'm wondering of the sections of the society, economics, ecology, fisheries, if that is broad-level, high-level, background, or more the historical, and I kind of like the idea that it's sort of setting the stages of the historical and then leading up to the present conditions, which is just building on what Stacey said before lunch. I kind of viewed the conceptual models as presently what these different groups of experts perceive and understand the important environmental components and linkages to be. Does that make sense?

BILL ARNOLD: Okay, and so what would you add specifically, Tauna?

TAUNA RANKIN: Well, I guess I think 3 through 6, probably, and there is maybe some kind of higher sub-heading to them, like historical context or background?

SENNAI HABTES: Generally, for like in my field of oceanography, when we do these anthology kind of things for an entire region, we use environmental description, and then you can do the social, and you can do economic, and you can do ecological, or you can do the physical environment, or you can do the biological environment. It incorporates describing all of those contexts across the entire region, because a lot of those things are shared across them, particularly for the biological and physical environment.

BILL ARNOLD: Okay. Tell Liajay how you want that to read, Sennai. I like it, if Tauna is okay with that.

TAUNA RANKIN: Yes, and I will just add that I see a lot of overlap between these sections, and I think Section 9, which is the current state of things, because it's present status. The ecosystem status report and these other components are going to be describing a lot of the same things that are in 3 through 7. I mean, mostly, I guess, 6.

BILL ARNOLD: I would go with grouping 3 through 7 under one common header, and I don't want to go beyond that.

TAUNA RANKIN: Yes. Okay.

SENNAI HABTES: I think you can also define it differently, in that describing the overall context of the society, economic, ecology, or biological and physical environment, that incorporates historical, and so changes and things that have happened in them, or a steady state between them, whereas the ecosystem status describes the current functioning and the connections between all of those.

BILL ARNOLD: Sennai, I like what you said about environmental background, or whatever it was, and I thought that was fine, environmental setting, whatever you want to use there.

SENNAI HABTES: Environmental setting, that's fine.

MARIA LOPEZ: These sections are the equivalent of what we have in the FMPs, and we call it description of the environment, and it will include everything that is from forward to 7. Now, I would assume that, in the FMP, what we were trying to do is to make them more detailed, because we already have sections like this in the FMP, and some of them will have more information than others.

For example, part of the ecology, in the current FMPs, it will benefit greatly from having more information, but we already have a lot of that information already in the plans, and I don't know how -- I guess this is a question for later, but how we're going to incorporate information that we already have in our documents into here, if we're going to be referencing it, or is it going to be copied again in here.

BILL ARNOLD: We'll worry about that later, Maria. All we want to do now is get a decent outline.

MARIA LOPEZ: All right.

BILL ARNOLD: So, Liajay, can you take 4 through 7 and get them as under 3? Beautiful. All right. That's as far as we need to go with that.

STACEY WILLIAMS: One of the headers that we're missing, and it's in the overarching goals, is cultural, and I don't know if that's within the society or we want to include it.

BILL ARNOLD: I would be curious to Tarsila's comments, because that's what I kind of meant when I was thinking about society, but culture could be, and whatever you guys think. If you want to add another heading -- I don't another heading is necessary, another section, but what do you think?

TARSILA SEARA: I mean, I agree that that could be under society. If we want to make a more descriptive sub-title there and include the word "culture", but I agree with you, Bill. I think that we would take care of that there.

BILL ARNOLD: If you really want to be thorough, just how about a is society and culture?

TARSILA SEARA: Yes, and that's what I'm saying. We can definitely add the word there to the sub-heading, to make it more explicit.

BILL ARNOLD: Okay, and so a is society and culture. Nice. Okay. So that's 3, and then 4 is the conceptual models. If I don't hear anything more on 3, then we're going to move on. No comments on 4?

ALIDA ORTIZ: I have a question and not a comment. In those conceptual models, the SSC, DAPs, and other council body conceptual models, and which are the other council bodies?

BILL ARNOLD: The TAP is another council body.

ALIDA ORTIZ: Okay, and so the TAP is going to make its own?

BILL ARNOLD: Not necessarily, but we certainly want to leave -- We want to have that freedom of movement, and we don't want to try to first guess the council, but what if they want to establish another body, a conceptual model team or something, and I don't know, but I just think we -- That gives us freedom of movement, as I like to say.

GRACIELA GARCIA-MOLINER: Yes. Exactly.

ALIDA ORTIZ: I thought that was taken up within the stacked conceptual models, but I'm not that clear.

BILL ARNOLD: It's totally different.

ALIDA ORTIZ: Okay.

BILL ARNOLD: But that's good, Alida. I appreciate you pointing it out and asking about it. Liajay and Graciela, in the final thing, we're going to want "council" capitalized, but we don't have to do that now. Okay. 5 is present status. We could add an e that is like other reports and documents or something like that, and we don't have to, but, again, it kind of keeps your options open, if you think that's a good idea. We're looking for input. I wouldn't say that I'm thrilled with e, and so I would like some additional input on that.

GRACIELA GARCIA-MOLINER: Would you include here the status of the island-based FMPs and the species that are present within the area and a review of that kind of thing?

BILL ARNOLD: No, and I think we've already dealt with that up above, or I hope so. Can you think of any other activities, and maybe Mandy would be really good on this, that would be kind of similar that we haven't captured? Since we specifically mentioned that ecosystem status report and integrated ecosystem assessment, are there other things, the risk analysis or anything else like that? It's fine if there isn't.

GRACIELA GARCIA-MOLINER: Maybe the EPA biocriteria analysis, and I don't have the complete title with me, but --

BILL ARNOLD: Sure. That could be an "e.g.", in parentheses.

TAUNA RANKIN: Bill, a clarifying question. Since Graciela called out the EPA analysis, are like any external documents kind of game here?

BILL ARNOLD: Well, of course, but we don't need to capture them all. We're not going to try to confine ourselves. We will provide some examples, but anything, of course, that has utility, we're going to use.

TAUNA RANKIN: Because the Coral Program's National Coral Reef Monitoring Program just released status reports for Puerto Rico and the U.S. Virgin Islands, and so I think those -- You can add the acronym, in front of status reports, NCRMP. Perfect.

BILL ARNOLD: Okay. All right. One or two examples is plenty, and so that's good. Anything else on 5?

MANDY KARNAUSKAS: Just a question on c, and I apologize that I tuned in a little bit late, and I may have missed it, but what do we mean by "integrated ecosystem assessment", and I guess this is more of a decision-making process than a way to get at present status, and so I'm just curious what we mean by that bullet c.

BILL ARNOLD: Maybe we should move that, Mandy, but you can see I qualified it, and I've added that parenthetical phrase, when I was writing this thing up, and we may not have one for a while, and we may never get one, but, if we do, do we want to include it in here, and where do we want to put it, and so you tell us where -- Do you think it would be better in future prospects or what do you think?

MANDY KARNAUSKAS: I mean, the process is a very general sort of decision-making process that kind of runs in parallel with the whole fishery ecosystem plan process, in a way. I don't know that it fits well under any particular bullet. Again, I'm not sure what is meant there. I mean, we might not have one for a while, and so is it referring to the actual program, coming from the IEA program, or if you're referring to a particular product that comes out of an integrated ecosystem assessment.

BILL ARNOLD: Well, my thinking was that we may not have any IEA-oriented activity, formal activity in the U.S. Caribbean, or we can't pre-suppose that, and there is no initiative right now, that I'm aware of, and you may be, and you certainly have a better finger on that pulse than I do, and could this be pulled out and put somewhere else, like as a development of an IEA, as like the second-to-last item in this whole thing, or something like that, or under 8, or something like that?

MANDY KARNAUSKAS: I can't see the whole outline on my screen, but I will think about it and chat about it later. I was just trying to get a sense of what you were getting at with that bullet.

BILL ARNOLD: We can take it out completely, if you think that's best, Mandy, but just let us know.

MANDY KARNAUSKAS: Okay. I will think about it and get back to you with an answer.

BILL ARNOLD: Okay. Any other suggestions for present status?

MARIA LOPEZ: I was just thinking of -- Does any of the things that are on 4 and that are on 5 include within that section how the council will use that?

GRACIELA GARCIA-MOLINER: No.

MARIA LOPEZ: It might be good to give a description.

BILL ARNOLD: That one is above, or else --

GRACIELA GARCIA-MOLINER: And below. It's above and below, yes.

MARIA LOPEZ: What I was thinking is that why not -- Like, if you are describing conceptual models, then just include right there how you plan to use that, instead of having to go to the end of the document to find out how you're going to use it.

BILL ARNOLD: We're not going to write the text now. Again, we don't want to --

MARIA LOPEZ: I understand. I understand, but I'm just thinking that it will be a good place also to say how this is going to be used, too. It's just an idea.

BILL ARNOLD: Okay, and so you could put a d that is applications, if you would like. Does that help, Maria?

MARIA LOPEZ: Yes, it does.

BILL ARNOLD: Okay.

KEVIN MCCARTHY: Bill, I think we're going to need an entire section, and maybe it's farther down, and we just haven't gotten there yet, but we need an entire section and a conversation on how this information is useful to management, how it would be used by management, or recommended uses by management, and maybe that's farther down.

BILL ARNOLD: That's -- We can add to it or reword it, but that's what 8 is all about.

KEVIN MCCARTHY: Okay. Good.

BILL ARNOLD: I mean, so we did all this, and what the heck? Okay, 6 I think is where we are, and I'm not hearing much more. Nice job on adding that to 4, Maria, and I think you guys are okay with 5.

MARIA LOPEZ: Bill, I think the same thing will apply to -- The application should apply to the things on the ecosystem status report and risk analysis, et cetera, even if it's just a broad discussion of how it could be applied, because, then in 8, you are going to take those and see what information from those applications -- What you can actually do and make a plan.

BILL ARNOLD: Got it. Good suggestion. Next.

STACEY WILLIAMS: Would research needs, Number 9, fall under future prospects?

BILL ARNOLD: I would leave research needs where it is, because it's sort of, okay, we've gone through all of this, and now we need this additional information to move farther forward, but, if you guys don't agree, that's okay. Again, it's not up to me to make these decisions. If you start moving research needs around, you're going to end up having to add it to every single category. Comments, folks?

MANDY KARNAUSKAS: I have an answer. I think that integrated ecosystem assessment should go in that 8, which is -- It's a tool for transferring the information to management, and so it should go in that Section 8, where we talk about how the council can use the information.

BILL ARNOLD: All right. Let's make it happen. That could be a sub-topic, an a. Even if we don't have a b yet, that's okay. Perfect. All right. Thank you, Mandy. I want to get after this research needs thing, because I personally don't like where it is, but what do you guys think?

GRACIELA GARCIA-MOLINER: Do you want to move research needs to a separate section? Is that what you're asking, Bill?

BILL ARNOLD: I was asking if everybody is comfortable where it just got moved.

GRACIELA GARCIA-MOLINER: I would put it back to where it was, but the --

BILL ARNOLD: Well, I'm with you.

KEVIN MCCARTHY: Well, if future prospects is the only place where we think research needs applies, then you could leave it here, but I don't think that's necessarily the case, and I also think we might want to -- I think we may also want to have it

stand alone, so that it's not lost somewhere as a sub-section.

BILL ARNOLD: I liked it where it was, as Number 9, or whatever. The last major topic was research needs.

KEVIN MCCARTHY: Yes, I think so, too.

TARSILA SEARA: I would agree with that.

ALIDA ORTIZ: I agree with that, also.

GRACIELA GARCIA-MOLINER: It's so much easier to send it out to people that are looking for that to get us money.

ALIDA ORTIZ: They will find it.

MARIA LOPEZ: Bill, I have a comment. The need for management amendments and revisions, shouldn't that be under 8?

BILL ARNOLD: Which one are you talking about?

MARIA LOPEZ: What we want to accomplish with future prospects, before Number 8, having Number 6 before Number 8, and should that be changed, or maybe I am not understanding what we're trying to accomplish there on Number 6.

BILL ARNOLD: Well, maybe two different things, because the amendments are what do we need to do, how do we need to amend the fishery management plans to reflect what we've learned and the guidance we're getting out of the FEP. The revisions are not amendments to the fishery management plans. We talk about that as revisions to the Magnuson-Stevens Act, which is a whole different game. We put them together, and we probably shouldn't, and maybe neither one of them goes there, but we should separate them, if we wish, and then make sure we're happy with where they are located.

ALIDA ORTIZ: I will make a comment. If it is future prospects, I agree with Maria. Assessing the fishery ecosystem could go first, and then future prospects.

MARIA LOPEZ: I think that, if we haven't -- In Number 8 is when we tie this together, and how do we know what are the needs for management if we haven't tied it together? My suggestion was to move the needs for management under 8, or after 8, so that, after we tie it together, we know what we need.

BILL ARNOLD: Do it.

GRACIELA GARCIA-MOLINER: I would change "needs" to something else, because, if someone reads this, it means that we're doing all this, and definitely there is going to come some management after we're done.

MARIA LOPEZ: Considerations, maybe, for management.

BILL ARNOLD: That will be 9, and that won't be b, right? That won't be b, or do you want it there under 8?

MARIA LOPEZ: I guess it could stay under 8, at the end, because it will be like the conclusion of your section.

BILL ARNOLD: Okay, and so I would like to have that just say, "considerations for management", and then, under that, have i be FMP amendments, and then ii be MSA revisions.

MARIA LOPEZ: I agree.

LIAJAY RIVERA: Could you repeat ii?

BILL ARNOLD: Magnuson-Stevens Act, or abbreviated MSA, revisions. Then get rid of revisions up above. What do you think? It's a draft, and I think we should lock it down, and keep in mind that we are going to have a motion and a vote to move this forward as-is, as a recommendation to the council, and we will take it as such to the council meeting later this month, which is weird, and I can't believe it's June, but anyway, and so, if you want, you could put the "draft" watermark on it, and it does say "draft" at the top, but I don't think we can emphasize too much that it's just a draft. It's just our recommendation to the council. Any more comments? Otherwise, we're going to save it and set it aside for now.

KEVIN MCCARTHY: Can we go back? Can we scroll down to 8, please?

BILL ARNOLD: Absolutely.

KEVIN MCCARTHY: For me, 8 is a big part of what this advisory panel might want to spend its time on, how -- All of this other work is happening, and so of what utility is it to the council, and how can we advise them how it might be useful, and that, to me, is a big part of what the selective knowledge of this panel could be doing for the council, and so I am wondering if we want to -- If we're ready to move on from that, and I am wondering if we shouldn't be spending some time looking at perhaps what other

regions have done when they talk about how this might be used or what the collective wisdom of the group on the phone, or on the webinar, might think of this.

I mean, this is a big -- All that other stuff has to be done, but this is where it all comes together for use by the council, and so I think this is a big component that we want to give some consideration to.

BILL ARNOLD: I agree, Kevin. Of course, we're just putting the table of contents together now, and we just want to capture if there's a topic area that you want to include, and I would certainly support that. I would say that, when we actually write the fishery ecosystem plan, the most important part of it, and the hardest thing to write, is going to be 8.

KEVIN MCCARTHY: Yes, agreed, and, I mean, I don't have the expertise to have a lot of comments on it, but I think it's -- I don't want to let the opportunity pass us by. I think we've gone into excruciating detail in other areas, because maybe those are the ones we're most familiar with or most comfortable with, but this is where we really need to focus some time on, and I am not the one to lead that discussion, but maybe we need to come up with a plan of how we might flesh this out a little bit more, because I don't want to go to the council with a big -- Great detail in other parts of this outline, and, again, it's an outline, and then sort of give just cursory time to the part that really is important. I mean, it's all important, and I get that, but the part that this panel can really advise them on.

BILL ARNOLD: You're right, Kevin, and so this is what we could do. We could put a c down there, and, in c, we say, look you guys, there is still a lot more to be done here, and this is just what you said, Kevin. This is the most critical part of the document, and we're going to have -- It wouldn't be a three, and it would be a -- I'm just suggesting this, but a note to the council, basically, that says this the most important part of the document, and we don't feel we have fully fleshed it out.

KEVIN MCCARTHY: Yes, and I'm okay with that, given that I don't know what else is on our agenda, but we may also -- If we're going to do that, and we're going to actually follow through, then we need to have some kind of game plan for our next meeting, to spend more time on 8, or wherever it should fall in the course of work, but we want to return to this in a really meaningful way, if we're not prepared to do it today.

BILL ARNOLD: Okay, and so two things. First, some may want to

add to this, and, second, what concerns me is the council may say, okay, we want the SSC to have some input on this, or we want to get the DAPs involved in this, and they could generate a bunch of guidance for us that they want us to apply, and that doesn't mean that we can't add to this, but, in such a critical section, we're going to want to have everybody's input, so we make sure we get it right, because, otherwise, it's just going to create problems down the line.

KEVIN MCCARTHY: Agreed. I don't have a problem with getting input from other sectors, but neither should we not do our due diligence, and that's all I'm saying, and, if we're not prepared to do that today, that's okay, and you may all want to go back and do some more research and think about this a bit more, and I don't want to just rush through it today because we're on the phone, but I don't want us to not return to this topic in a really meaningful way, and that's my point.

JUAN CRUZ-MOTTA: Kevin, thanks a lot for your comments, and I totally agree with you. This is the -- In my opinion, this is the center of all the work that I believe we should be doing, but then, to try to answer your question, Number 8 means very different things for different groups of people, and let's say people in Europe and people in Australia and the U.K., now that they consider themselves not part of Europe, and even the United States and the different councils look at this very differently and how to use this ecosystem approach to direct management.

It ranges, and it goes from considering aspects of the ecosystem to do a stock assessment, as we were discussing or mentioning this morning, to including in the action model of a stock assessment stuff like predator-prey interactions, and, for other people, it means describing and doing a conceptual model, and that's it. That's the EBFM approach, and it's, yes, we did a conceptual model for our system, but they are still managing the system using stock assessments, for example.

Kevin, it means a lot of different things, and there is not a consensus of what using an EBFM approach means, and this is based on the literature review that we have been doing, and it's definitely not commissioned by the TAP, with the Lenfest project, and so it means different things, and we should advocate, and I communicated this to Bill during the break, that we should take a good time to discuss about this and what it means in the region to use an EBFM approach, because it could mean very, very different things. Thank you, Bill.

KEVIN MCCARTHY: J.J., I appreciate your insight there, because

I think it would be very helpful, for the council and all the stakeholders, to understand the various levels at which this might be applied, and those are the things that we need to have conversations about, and maybe that's one way forward, is to map those out in this section, and there may be other ways to do it as well, but I think it's a lengthy conversation that maybe is not for today, given -- Again, I don't know what is left on our schedule, but certainly it needs to happen, and I certainly need to do some homework before I am really prepared to contribute much to that conversation, but other people are well ahead of me on that, on that thinking.

BILL ARNOLD: All right. So, Kevin, we have put pseudo-placeholders in other places, and I would suggest that we get a placeholder here for this, and we don't have to flesh it out, but it's important enough, and not only do we not want to forget it, which we all seem very capable of doing, but I would like to have it out there for people, when they're looking at this, and I know they will every day, to be thinking about it and adding to it, at least in their minds, and so what do you think about that?

KEVIN MCCARTHY: I think that's a great idea, and I think that's a point you can make when this information is presented to the council, is that, hey, the TAP recognizes that this is the meat of the whole thing, and all the other work is absolutely critical, but here's where it comes into play for the council, and so we're still working our way through that, and stay tuned, and there's more to come.

BILL ARNOLD: Okay. In the Readers Digest version, we could put that right down there as c, and even in all caps, if you want to. I need as much help as possible remembering what I need to present to the council, because it gets intense and confusing, once you get going, and there's a lot to cover, and so it's easy to forget things, and this is not something that we want to forget.

GRACIELA GARCIA-MOLINER: Mr. Chair, you have three people in the queue, but do you want to actually type in something, under c there for a placeholder, before we go to Maria, Tauna, and Mandy, in that order?

BILL ARNOLD: Yes, please. Let's get it down, first. Kevin, please lead on this.

KEVIN MCCARTHY: If all we're looking for is a placeholder, it would be -- It doesn't really fit in to the way we've got this

outline going, but, I mean, essentially, or it seems to me anyway, we want to convey the notion that the TAP is still in discussion on all the various ways that EBFM might inform the council for management. I mean, that's awfully long-winded, but I think that's what we're saying, but somebody else can wordsmith it perhaps better than I.

BILL ARNOLD: Well, we're going to hear from them. Maria. Or let's finish first. Sorry, Liajay. Let's get it down, first. Help her out, Kevin.

KEVIN MCCARTHY: Basically how the EBFM might inform the council, or management decisions by the council, and that is truly a placeholder, mostly for you, Bill, when you are presenting this, at least the way I've got it down there, and someone else may come up with a better message.

BILL ARNOLD: Okay, and so clean that up a little, please. I think we want it to say might inform management decisions made by the council, and is that what you're looking for? Does that make sense?

KEVIN MCCARTHY: Yes, and I think this is just a talking point for you, I mean, the way I've got it written.

BILL ARNOLD: Yes, and you could even put it in italics, and, kind of the notes that I'm making to myself and us, I'm putting them in italics.

LIAJAY RIVERA: What would be in italics?

BILL ARNOLD: All of c, that whole statement. Thank you. Maria.

MARIA LOPEZ: I just had a couple of suggestions for this section, and I agree with Kevin and J.J. about the importance of this. To me, this is a plan, and this should be the action plan, right, at least in terms of management, and so I think we should convey that information in there, even if it's very generic, and the first thing that I would do.

Again, this is just a suggestion for the group, but I would move that integrated ecosystem assessment to the end, because that may or may not happen, and, the way that this is set up right now, it's looking like this is part of it, before the most important things, which is basically what are we going to be doing for management.

I think this would be a good time to look at the loop, because, if you look at Number 3 and Number 4, there are a couple of bullets in there that we can actually just copy in there. Like, for example, one of them says identify potential management strategies, and just leave it at that, and then you can say, well, the TAP still needs to discuss how this all is going to tie together, and that's it.

Because this is a section that the council is going to be paying the most attention to, it's, after you go through all of this process, what are you going to give me, and so just say in there to maybe identify potential management strategies or -- I am looking at the loop right now, and it's in Number 3 and Number 4, but workplan, something as generic as that. That way, it gives them an idea of where that's going to be and that we still haven't defined it yet. That's it.

BILL ARNOLD: But you still want this in that second-to-last section, right?

MARIA LOPEZ: In Number 8, yes, because that's the workplan. It's just -- I am just trying to put some flesh in there.

BILL ARNOLD: Liajay, when you do this, I would like for you to do this in track changes, because it looks like we're going to be having a bit of a conversation on this, and so let's keep the old stuff and the new stuff, and this will do that.

MARIA LOPEZ: It would be moving that one to the end of the same section, like let's say c.

BILL ARNOLD: Not in italics, but okay. That's good.

MARIA LOPEZ: Then, the considerations for management, the way that we were talking about it, it's like how are we going to do amendments, et cetera, and, before that, we should put identify potential management strategies, and so that will be a.

BILL ARNOLD: Management strategies.

MARIA LOPEZ: Then just as a starter, and then, once we get ahead in this process, we can look at the Number 3 after that, and it has evaluate the consequences of alternative management actions, and then you have select management strategy, and we don't have to deal with any of that right now, and this is just to let them know that this is where we're going to be looking into, into what we can do with all this information that we have put together.

BILL ARNOLD: Okay, and so, when I present this, one way we could do is we could have the full loop at the top, and then we could have the individual components of the loop ahead of, or integrated with, those sections that pertain to that and walk it right through there, because it's complicated stuff, and it's hard enough for us to understand it, and we've got to create this in a format that's as easily and clearly understood by the council as possible, and that's not really our problem now, and maybe that's just my problem, but I'm just kind of thinking out loud, so that you'll know how we might address this. All right. Anything else, Maria?

MARIA LOPEZ: No. That's it. Thank you.

BILL ARNOLD: Okay. Tauna.

TAUNA RANKIN: Just some additional suggestions. The first would be to add to 8, (b)(iii), under MSA revisions, to add another of policy statements, and one thing some councils have been doing is coming up with policy statements that either like guide across FMPs or they are used to communicate to other agencies, and they could use them through the consultation process, a lot of different ways, and so that's a management tool.

BILL ARNOLD: Tauna, is it okay if we say CFMC policy statements?

TAUNA RANKIN: Sure.

BILL ARNOLD: Because that's what we're looking for, right?

TAUNA RANKIN: Yes.

BILL ARNOLD: Okay. All right.

TAUNA RANKIN: Another tool is actually already called out under b, and that's restoration and mitigation, and so I don't know if we want to consider moving that, or I think that this plan could help guide some restoration, particularly non-regulatory-related restoration activities.

BILL ARNOLD: Okay. For now, we've got it in there, and let's just leave it, and I'm not saying that we won't end up moving it, but we can move it, and they would want to move it back, and so who knows, but the main thing is to capture this stuff.

TAUNA RANKIN: Okay. Then the third is just that this might -- We might need a Number 10, and we need sort of the end of the loop, like how did we do the performance evaluation, and we don't have anything about performance measures, and I don't know if we want to put the developing them under 8, or if we just have a section about performance evaluation.

BILL ARNOLD: That's a great idea, Tauna.

TAUNA RANKIN: Under that, I think we call out management strategy evaluations, and so maybe a sub-bullet of performance measures and management strategy evaluation. You can make them two separate bullets, and then I think that's perfect.

BILL ARNOLD: I like it. Nicely done.

TAUNA RANKIN: Okay. Thanks.

BILL ARNOLD: Anything else?

TAUNA RANKIN: Nope. I'm good.

BILL ARNOLD: Mandy.

MANDY KARNAUSKAS: I thought that was a very good point by Tauna, and I wanted to go back to Kevin and J.J.'s point on this larger conversation. I think that's an also very good point that they made, and it relates a little bit to discussion that Jocelyn brought up yesterday.

She mentioned that those of us who are providing supporting information need to be very explicit about how information gets fed into management, and that it is products that are coming out of this effort, and how we envision getting the products to management, and I think it's very important that this body has those sorts of discussions, as Kevin and J.J. mentioned, because we can give, for example, an ecosystem status report to the council, but we can't expect them to know -- To pick it up and use it, and so we need to provide some possibilities and some guidance, in terms of how ecosystem status reports get used.

Kelly, in her presentation, had some examples of how those get used in other regions, and so I just wanted to say that I would be very eager for this body to have that conversation at some point, to provide that sort of advice.

BILL ARNOLD: Mandy, I'm not sure that's a table of contents inclusion, but just an approach that we need to stay on top of.

MANDY KARNAUSKAS: Yes, and I just wanted to second that the conversation that Kevin and J.J. were talking about I think is very important to have.

BILL ARNOLD: Okay, and so, two things. First, never let your four-year-old drive your car, and, second, if you want to add it as a table of contents topic, then I have no -- I personally have no objection to that. It would be way up top.

MANDY KARNAUSKAS: I wasn't -- It doesn't need to be -- It's just that we, at some point, flesh out that Number 8 with the TAP, and, as Kevin said, it's probably not something we can do this afternoon, but at the next meeting.

BILL ARNOLD: Okay. Do you want to add any kind of placeholder or anything, or are you okay with the way it is now?

MANDY KARNAUSKAS: I think it's fine.

GRACIELA GARCIA-MOLINER: Bill, if I may, under 8, we will move considerations for management to a, because we need to consider management and then identify potential management strategies, and we will move MSA, and so that would be b.

Move MSA revisions to i, before the FMP amendments, because that's a conversation that we started yesterday, and, in order to apply anything of what we want to do, there has to be some revisions, and we talked about the National SSC and the CCC, et cetera.

BILL ARNOLD: Okay, and so you may not like the way "MSA revisions" is worded, but okay.

GRACIELA GARCIA-MOLINER: That's fine, but this is where it will come in, because, if something fruitful comes out of this, and there is a new way of doing business, you need to make sure that the regulations include the possibility of using that, and, because this is part of the National SSC conversations right now, it's important to have it upfront. Thanks.

BILL ARNOLD: Okay.

GRACIELA GARCIA-MOLINER: I mean, you can say no. I am not a TAP member, and so you can turn it around.

BILL ARNOLD: Nobody is complaining. Yet. Liajay, I think everybody would be okay with accepting all these changes and

cleaning it up.

GRACIELA GARCIA-MOLINER: There is something about fisher prospects that needs to be looked at and has a blue line. It might be a repetition, because future prospects, and prospects is in the future. Okay.

BILL ARNOLD: Stacey.

STACEY WILLIAMS: This is just a general question, but is there a timeline of when this is expected to be finished?

BILL ARNOLD: The FEP?

STACEY WILLIAMS: Yes. I don't know how I missed that.

BILL ARNOLD: I thought it was like December of 2021, and we may have to have a bit of discussion with the council about that, but, Graciela, you may remember better than I. They did set a deadline for it.

GRACIELA GARCIA-MOLINER: I am looking for the slide. Hold on a second. Well, actually, they gave us the following timetable. We are in the second part of 2020, and this is pre the COVID problem, and so it actually includes 2021 to 2023 to develop and finalize the FEP and the updates to the council, and so we do have a little bit of leeway.

BILL ARNOLD: Well, actually, that's good news. I just felt like December of 2021, which maybe I just made up, was way too soon.

GRACIELA GARCIA-MOLINER: This was presented at the December meeting, 2019 in Ponce, and the timeline -- I believe it didn't change, but I will look the minutes up right away, and so 2021 to 2023 is develop and finalize the FEP and update the council.

BILL ARNOLD: Well, that might be December 2020, since we're already working on it, but okay. I'm not going to sweat those details.

GRACIELA GARCIA-MOLINER: 2021 to 2023.

BILL ARNOLD: All right, and always keep in mind, as we've discussed, a fishery ecosystem plan, like a fishery management plan, is never truly done, and it can always be modified and amended and adapted and changing and additions, and we would be remiss not to.

ORIAN TZADIK: Bill, just, with regard to what you said, the last thing, about constantly revising, and sorry that I have missed the last hour or so, and maybe you guys have already spoken about this, but should we build it in here somewhere? I know that, when we had originally spoken about this, kind of three years ago, we envisioned it being a constantly changing document, and I think we're far away from that vision, but I do think that some sort of re-evaluation process should be built into the FEP.

BILL ARNOLD: So look at 10, and I would suggest that we add a c that is to review and revise, or something like that.

ORIAN TZADIK: Yes, and I agree. That works.

BILL ARNOLD: Review and revision schedule, or something like that, because -- We will probably want to, as the council tends to do, and rightfully so, and they actually establish a timeline for conducting formal reviews, and I think we should have that in there. Is everybody okay with that?

Okay. I am ready to lock it down, unless anybody has any objections. We won't vote on it yet. We won't vote on it until we're voting on it as a recommendation to the council, and that will come later today, but, for now, I would like to save it and set it aside and take our afternoon break, if that's okay with everybody.

MARIA LOPEZ: I have one question, Bill. It's going to be fast. Again, considerations for management, and so we're talking about two different things. MSA revisions, meaning that we may want to do things that we cannot do right now, versus FMP amendments, and that is establishing that we can use the information that came from the products that are in here, or the information that was compiled in here, to make changes to our actual management, and is that correct?

BILL ARNOLD: Yes. The MSA revisions is sort of an advisory thing, is how I was thinking of it. Like I said, the council and the SSC -- They can take it up to their National SSC meetings, and they can take it up to the Council Coordinating Committee, et cetera, and you forward, and you make 10,000 suggestions, and one of them makes it to Congress, but, still, you need to make the suggestions, and that's what I meant by that.

That may be something the council jumps on and says we've got to

reword that, or reconsider it or something, but, unless you guys want to reword it, I think it's very important to have it in there, and I'm happy with the way it's imperfectly worded.

MARIA LOPEZ: I agree, but I just felt like maybe the amendments should be before the revisions, now that I understand what you were trying to say.

BILL ARNOLD: Well, we just moved it to after, and so you guys go ahead and fight it out, and let me know when you're done.

GRACIELA GARCIA-MOLINER: Well, one of the issues that we're having is that we don't want to put the cart before the horse. If we start talking about FMP amendments and strategies for management, et cetera, this might end up nowhere.

One of the first things that needs to happen is that the language in the MSA and the allowance for councils to do management regulations based on the ecosystem needs to be dealt with, and that's what the National SSC is also bringing to the table. I mean, everything is postponed until next year, and there are things that are happening, and the CCC just met, and they will have another informal meeting pretty soon, and that's probably where things need to move first, because, if not, we're stuck with the same type of management that we have to date, closed areas, seasonal closures, size limits, et cetera, and so that --

BILL ARNOLD: Graciela, I agree, but that doesn't mean that we wouldn't be doing FMP amendments. We can take FMP amendments that take ecosystem --

GRACIELA GARCIA-MOLINER: I didn't say that we were not going to do it. I am just saying that people -- When you read something, you read the first things first and skip over the other ones, but I am reading the table of contents exactly the same way. We need to be thinking in terms of stakeholders out there, and that doesn't have anything to do with what's going to go in the table of contents, per se, or the document, per se. It has to be what people perceive when they read these things.

BILL ARNOLD: All right. As usual, Maria and Graciela are fighting with each other. Do we have a tie-breaker?

MARIA LOPEZ: It's okay. The way I was reading it is that I don't want to give the impression that you have to have a revision to the MSA for you to be able to have an amendment for something. For example, if I wanted to change a bag limit,

because I know I have better information or something, and I was talking more about on a smaller scale, but if that's not the way it's understood, that's fine.

BILL ARNOLD: This is not a process agenda. This is just -- I consider these things to be relatively -- Not completely, but relatively independent. You can have FMP amendments without revisions, and vice versa. You can put a policy statement out that has nothing to do with an MSA revision or FMP amendment, and so I don't have a problem with the order, because I don't think the order drives anything, but, if you guys disagree, that's fine.

MARIA LOPEZ: It's all good. We can go to break then. Thank you. Thank you to both of you.

BILL ARNOLD: Sure. Thank you, Maria. All right. Let's break and come back at 2:45.

(Whereupon, a brief recess was taken.)

BILL ARNOLD: Okay, everybody. I feel like we've done everything we need to do on the draft pseudo table of contents for the fishery ecosystem plan, and I would like to go back and revisit the goals and objectives, if for no other reason than to drive you completely insane, but I do think we should look them over one more time, and then we are going to vote on these as recommendations that we will make to the council, and we will do a formal motion and a formal vote for each of them separately. Then that will be it.

I mean, if there's any other thing -- We have an Other Business topic at the end, and we can always talk other business, legally, but, otherwise, there is no law that says we can't end early, and so that's how this is laying out. Let me know your thoughts. Otherwise, let's look at those goals and objectives again.

ALIDA ORTIZ: Bill, I keep looking at this Number 8, the coordination of ecosystem approaches to fisheries management, and I am going to express my feeling from the outreach and education. When I go to the fishers, when I go to the communities, and I will explain that the fishery ecosystem plan is not by any way a management plan, and it is not to bring in new regulations or anything like that, and is to enrich the biological and ecological and scientific knowledge of the marine ecosystem among the stakeholders.

To me, this Number 8, completely, it's like a -- Maybe I am wrong, but this is the first time that I have seen this, and it's like the TAP giving instructions, and I put that -- It's like giving instructions to the council on what to do with the management that they are doing, and am I going too far? Am I understanding the wrong thing?

BILL ARNOLD: Alida, we don't instruct the council on anything. We make recommendations, and they make decisions. We make recommendations. We are an advisory panel, and keep that in mind at all times. We give advice, but, hey, your teenage kids give you advice constantly. If you took it, and you run into a bridge abutment -- But, Alida, this makes me think of something. Is there anywhere in here that you would like to have an outreach and education component, or do you think we've captured it?

ALIDA ORTIZ: I think we had that information component at the very beginning.

BILL ARNOLD: Perfect.

ALIDA ORTIZ: This is something that I am going to work on that strategy and send it and discuss it and get it there. When we say to explain the approach, to me, that's part of that outreach and education.

BILL ARNOLD: Perfect. All right. Let's shut down this table of contents and get the goals and objectives up.

SENNAI HABTES: Before we shut this down, there were three things that I noticed that are kind of lacking in this that I wanted to bring up, and I don't think they necessarily have to go in this draft, but I just would like to talk about it.

One was in terms of essential fish habitat, and we don't have anything in there discussing it or associating it with ecosystem-based management, and I'm not sure where would be the most appropriate place to put that in, and maybe down --

BILL ARNOLD: Well, we had that ecology -- We had, somewhere in there, under ecology, habitat.

SENNAI HABTES: Right, but those are more descriptive settings, and I do think that EFH should have its own section, maybe. You can have it in there as a descriptor.

BILL ARNOLD: I wouldn't put it under ecology. I would put it

under fisheries, because I think, and I'm curious to hear you all's thoughts on it, if you want to add it, and, I mean, it is a regulatory requirement.

SENNAI HABTES: Right, and so that's why I was thinking more down in -- I can't really see the whole document, but maybe in present status, in 5, or down in ecosystems, in 7.

BILL ARNOLD: Okay.

SENNAI HABTES: The other area was I think for --

BILL ARNOLD: Let's get this in there first.

SENNAI HABTES: Sorry.

BILL ARNOLD: That's all right. Tell her where you want it.

SENNAI HABTES: I think down in 7 would be appropriate, and so it says fishery and ecosystem conditions, and we're also assessing EFH.

BILL ARNOLD: Okay. Tell her exactly how you want it to read, and that's going to be d, right?

SENNAI HABTES: Yes. Then I think those two would satisfy it.

BILL ARNOLD: Okay. Next?

SENNAI HABTES: Next is, under 8, just listening to Alida's point, I do think we need to have something in there that clarifies how this body and how this process works, and so, for c, one thing that we can do -- I was looking over some of the other FEPs, and I think the Gulf of Mexico handles it pretty well in their outline, and we can have a bullet point, and so maybe change c to just process or mechanism for bringing ecosystem science into the council process. You can put, in parentheses, "TAP is still in discussion on this". I do think we need to make it clear.

BILL ARNOLD: Everything in italics would be in parentheses, and then, ahead of that, you would have what you're talking about.

SENNAI HABTES: Process or mechanism for bringing ecosystem science into the council process.

BILL ARNOLD: EBFM into the council process.

SENNAI HABTES: Correct.

BILL ARNOLD: Okay. I don't want that in italics. Just the stuff in parentheses, and I think it would be process or mechanism and not both, right?

SENNAI HABTES: Correct.

BILL ARNOLD: Process for bringing. Perfect.

GRACIELA GARCIA-MOLINER: You have "process" twice in one sentence. Process for bringing the EBFM into the council process, and so mechanism for bringing.

SENNAI HABTES: You could just do "process for bringing EBFM to the council".

BILL ARNOLD: I like it. No sense getting too crazy on details. Okay. All right.

SENNAI HABTES: Then the last one is in assessing fishery and ecosystem conditions, 7, and we haven't put anything in there that discusses uncertainty, or variability, regarding environmental changes and human activities on ecosystems and fisheries resources.

BILL ARNOLD: So would that fall under risk analysis? Tauna, I want your input as well.

SENNAI HABTES: I think it can. I do think we need to -- It also, I think, is part of assessing fishery and ecosystem conditions.

BILL ARNOLD: Okay.

SENNAI HABTES: Not only is it risk, but it should be considered a part of monitoring and management.

TAUNA RANKIN: I agree that it will be a component of the risk analysis, but, yes, also in just describing the current state.

BILL ARNOLD: All right, and so let's add an e, and make sure Liajay knows exactly how you want it worded, and go slow, please. It's not easy.

SENNAI HABTES: Understanding the uncertainties/variability of environmental changes and human activities on ecosystems and fisheries resources.

BILL ARNOLD: Okay.

SENNAI HABTES: That's it for me.

BILL ARNOLD: Okey-dokey. Thank you, Sennai.

SENNAI HABTES: No problem.

BILL ARNOLD: Anybody else?

KEVIN MCCARTHY: Bill, I just want to reiterate that I think those were really important points, especially making sure that the committee members are all on the same page about how this will be used, or could be used, and what our role is in that whole process, because, in listening to Alida, I think there was still some uncertainty among us, and certainly for me, and so I think it's really important that we're all on the same page about what's happening here and how it might be used.

BILL ARNOLD: I can't promise we are, Kevin, but we're getting there.

KEVIN MCCARTHY: Well, that's progress then.

GRACIELA GARCIA-MOLINER: One more thing. I mean, probably you want to put b after c in 8, because you need to bring it to the process before you can use it, or identify them.

BILL ARNOLD: Sure. Okay. Anything else, real quick? Okay. How about we do this, because we need the practice, and I'm sorry, Liajay, but go ahead and bring that back up, please. If everybody is okay with this, I decided that we could go ahead and vote on it as a recommendation to the council, and so we'll need a motion, and we'll need it seconded, and we'll need a vote, and we need to keep track of how that goes.

KEVIN MCCARTHY: Bill, what exactly are we -- Can we write a motion out?

BILL ARNOLD: That's what I would like to do.

KEVIN MCCARTHY: We're going to vote on it?

BILL ARNOLD: Yes, and I would like it on a separate page, the motions. We can have a page, Liajay, of motions, because we'll have two of them, at least, and so that's a new Word document. I can't make the motions, is my understanding.

GRACIELA GARCIA-MOLINER: Motion to present to the council the FEP outline, as projected on the screen earlier.

BILL ARNOLD: That's a suggestion from a non-TAP member.

GRACIELA GARCIA-MOLINER: Correct.

BILL ARNOLD: Is there any DAP member that wants to run with that?

SENNAI HABTES: Motion to present the council with the FEP outline draft, as shown earlier on the screen.

BILL ARNOLD: Thank you, Sennai.

SENNAI HABTES: You're welcome.

BILL ARNOLD: The Technical Advisory Panel moves to present. Jocelyn, don't hesitate to speak up.

GRACIELA GARCIA-MOLINER: The EBFM TAP.

BILL ARNOLD: We can clean it up. Then "moves to present". Jocelyn, in my experience, would not be real happy with "as shown earlier on the screen".

SENNAI HABTES: How about I modify that to the draft FEP outline in its current form?

BILL ARNOLD: Jocelyn, are you on here?

JOCELYN D'AMBROSIO: Yes, I'm on here. You could say developed at this meeting, and so the June 1 and 2 meeting, something like that, and that sort of links it to this meeting. If you saw these motions independently, that would be linked in time.

BILL ARNOLD: Okay. Please guide Liajay. Jocelyn, would you give her those words, those exact words, you just said?

JOCELYN D'AMBROSIO: Sure. You could say the draft FEP outline developed at the June 2020 TAP meeting.

BILL ARNOLD: Yes. If you want to clean that up, that's fine. Now, forgive me for the Roberts Rules ignorance, but do we discuss first and then second, or do we second and then discuss?

GRACIELA GARCIA-MOLINER: Second and then discuss.

BILL ARNOLD: Okay. So it dies if we don't get a second, and also record who proposed it, Sennai Habtes, and who seconded it, if we get one.

TARSILA SEARA: I second it.

BILL ARNOLD: Okay. It's Sennai Habtes proposed the motion, and Tarsila Seara seconded it.

ORIAN TZADIK: Bill, can I make a clarification?

BILL ARNOLD: Go ahead.

ORIAN TZADIK: As Sennai was saying it, I was thinking that what he ended up putting in, which was that this is a draft FEP outline, which means that we are reserving -- I mean, this is just a draft that we're going to be presenting to the council, and we're not actually asking them to put this into kind of final form and to make this the table of contents for the FEP, correct, and we're just kind of presenting them with what we're thinking about at this point?

BILL ARNOLD: Yes, and I think that's exactly the way the motion reads, Ori. It says we're going to present it to the council, and that's all we're going to do, is present it to the council, the draft FEP outline that we schemed up. It's up to them what they do with it, and we're just agreeing among the eight of us that we're going to present it to them.

One thing is it should say Sennai Habtes proposed the motion, and Tarsila Seara seconded the motion. We've got to keep that distinct. It doesn't have to be that formal, but we need to make that clear. Then we'll have a discussion, if anybody wants to discuss this, and like we haven't, but, hey, I don't mean to influence the crowd.

ORIAN TZADIK: My only concern was the one that I just brought up, and so I'm happy.

BILL ARNOLD: Okay. Anybody else? Okay. I would like to take a voice vote. **All those in favor, say aye; all those opposed say nay. The vote is eight in agreement, or however you want to word it, and zero opposed. The motion passes.**

All right. We accomplished something. Yay for us. Now, I would like to go back to the goals and objectives, and they are very draft, but talk them over, if we wish, and then do the same

thing, the same process, for presenting them to the council.

GRACIELA GARCIA-MOLINER: So you want to see the goals and objectives only, right?

CONTINUED DISCUSSION OF GOALS AND OBJECTIVES (138:57)

BILL ARNOLD: Yes, please. You can set the table of contents aside. We're done with that. The first thing I would say about these, and maybe I'm wrong, but I didn't think we were going to include Bullet 2 there, but, again, maybe I missed that.

GRACIELA GARCIA-MOLINER: Liajay, this is the last version, right, the one that Bill sent us?

LIAJAY RIVERA: It is supposed to be. Let me confirm. Give me a second. Yes, this is the latest version.

BILL ARNOLD: Will you scroll through it please, Liajay, just so everybody can get a look? That looks like it. Is anybody concerned?

JUAN CRUZ-MOTTA: I have a question about Number 2. What are the objectives with forage fish or herbivores, or are those placeholders?

BILL ARNOLD: Those are kind of placeholders. We can massage them out, if you want to, but that's all they were, and we all agree that this doesn't tell you much, just to say, "forage fish", and we need better terminology than that.

TAUNA RANKIN: I had a suggestion for those objectives. I was wondering if it could be simplified to maybe three or four objectives that are basically reduce bycatch, maintain trophic dynamics, maintain structure and function of habitat, and maintain biodiversity, as kind of a more simplified objectives under 2.

BILL ARNOLD: Any comments?

ORIAN TZADIK: I like the idea that Tauna is throwing out. I am kind of leaning towards though that I feel like I need some more time to think this over and digest some of this, because what I propose that we would present to the council would be a -- It would have the overarching goal, and then I guess -- I mean, we have nine here, but maybe more like seven goals, proper goals, and then all these bullets come afterwards, as objectives.

I like where Tauna was going with that, because I agree that that should be kind of one of the objectives, and I'm just thinking that that's not necessarily the only place that each of these bullets lives, and so to take it out of the context of each sub-goal, and I know I was the who suggested that we do it like this in the first place, but I think that was good for at that time, but now I think we need to have these be their own objectives and their own stand-alone goals, and, personally, I would want some time to digest that, and I don't know how the rest of the group feels.

KEVIN MCCARTHY: Ori, are you suggesting, just for Number 2 here, that we're not ready to show these bullets, or should we remove all the bullets and just show the Sub-Goals 1 through 9 the next time Bill is presenting to the council? I am fine with either way, but I'm wondering what you're thinking.

ORIAN TZADIK: In terms of presenting to the council, I am leaning towards just the number, just the sub-goal, because, like Tauna just said, reducing bycatch, and, while that's absolutely a very good objective, bycatch needs to be thought about differently in this region, and so what do we mean by that, and it's not just this -- I mean, I think, in a lot of other regions, you can just say one of the objectives, and one of the approaches we want to do, is minimize bycatch, whereas, here, I think we need to be a little bit more specific and think about it potentially under different sub-goals, right?

So, I mean, Graciela can correct me if I'm wrong, but trap fishermen in St. Thomas, I'm pretty confident, report zero bycatch, and so you can't necessarily minimize zero, and so what are we talking about there, and I think what we're talking about is using, potentially using, fishing gears that don't target species other than what you want to catch, and so we may be talking about completely different things, like marine mammals or sea turtles or something like that.

Like I said, I just want a chance to kind of wrap my head around those level of details, whereas maybe the sub-goals, maybe we could come to an agreement by the end of this call, and we could come to agreement what we want to present to the council, but the rest of it, I think, is a little bit more nuanced.

GRACIELA GARCIA-MOLINER: If I may, since I was called by name, it's true that St. Thomas refers to zero bycatch, but that's not the case for St. Croix and Puerto Rico, and you might be able to use that to your advantage, the number of bullets that you have here, to make the difference -- For the council to tell you

there is this big difference between this island and the other two, and, since we're going to have to deal with those differences throughout, it may be a good opportunity to refine the bullets for each of the islands.

KEVIN MCCARTHY: I'm wondering if that doesn't sort of speak to Ori's point that this may not be ready to be rolled out, even in draft, because we haven't had the necessary discussion about how it might fit within these Sub-Goals 1 through 9, or however many we have, and I'm okay with moving forward that way.

I could also see some sort of intermediate -- Like, if we think on Sub-Goal Number 1, that we've got a pretty good handle on the objectives under there, then, sure, we leave them in, but, if we're not happy with 2, because we need more time to discuss, we could have it, again, that sort of talking point for Bill that, hey, this is ongoing discussion, but we know this is a sub-goal.

BILL ARNOLD: Let me propose something. It would be good, probably, to have a document/slide that we show them that just has the overarching goal, and, if there's two of them, that's fine, and then these nine sub-goals, without the objectives, and then, to give them some context of what we're talking about, I could bring up a slide for each sub-objective that has these bullets under it, and then I could talk about these are some ideas that we had regarding that goal.

They are not fully developed, and they're just ideas to help you think about this, and some of them aren't even properly structured, and I don't mind saying that, and I would like to -- I'm afraid that, if I just put the nine goals, sub-goals, up there, they're just not going to have any kind of context within which to consider it and evaluate whether they want it in there or what else they might want, if they want to re-word it, et cetera, et cetera. Let me know your thoughts on that.

KEVIN MCCARTHY: I would just agree with Bill, and I can't believe I'm saying that.

JOCELYN D'AMBROSIO: I had a question, just looking at these goals, or the sub-goals rather, without seeing the overarching goals and trying to -- Looking at them again, I have a question about what the sub-goals are trying to achieve, because I think they are sub-goals of the fishery ecosystem plan, but some of it looks like it might be a sub-goal of management, and I guess this goes back to what the plan is trying to achieve.

If the plan is a document that describes the ecosystem and what

we know about it, will that, in and of itself, enhance community resilience? Will that, in and of itself, enhance ecosystem resilience?

BILL ARNOLD: Jocelyn, let me ask you this.

JOCELYN D'AMBROSIO: -- outcomes of a management strategy that builds on the ecosystem plan, and so that was one question I had, and then I just had my -- I can come to this later, but about the objectives, just the same comment about the objectives and sort of who is meeting those objectives.

BILL ARNOLD: Let me address your first one, real quick. I don't think we should be using the word "enhance", because the FEP is not going to enhance anything. It should say "review" or "evaluate", or something like that, but I personally don't think that it should say "enhance", and I think that would be a sticking point, because it implies that the fishery ecosystem plan is going to do something it can't do.

ORIAN TZADIK: Hang on. Can we go up to the overall goals? I mean, both of these are about providing a framework or promoting approaches, right? I would suggest that second one that we amend slightly to say something about providing a framework that promotes the following sub-goals, and then it's all under -- It's understood that all of these sub-goals -- Yes, we're not going to enhance the -- To enhance human community resilience, and that's not the goal of the FEP, but the FEP is to create -- The goal is to create a document that will advise and provide a framework on how the council can enhance human community resilience.

BILL ARNOLD: Okay, and so what I would like to say is a corollary goal is to provide a framework, if you guys are okay with that. It's a corollary to the overarching goal.

ORIAN TZADIK: Yes, that works for me.

JOCELYN D'AMBROSIO: We should probably change "Gulf of Mexico" to "Caribbean".

KEVIN MCCARTHY: Remember that this was an example that Mandy provided, and I don't think this is one we came up with ourselves, and I'm happy to adjust it to fit our needs, but that's where that came from.

BILL ARNOLD: Okay. Really, I don't remember that we were including this, and I'm fine to include it, but I do think we

should say a corollary goal is to provide a framework.

ORIAN TZADIK: I like that, Bill. I think, that way, it's clearly stated what our overarching goal is, and then we have a way to include all these things we've spoken about, by saying, you know, again, the FEP is not going to enhance anything, but the FEP will provide a framework that allows the council to consider management actions that will enhance X, Y, and Z.

BILL ARNOLD: Okay. Liajay, say a corollary goal, right where you are, is to provide -- Then say framework that promotes. Okay. Let's keep working on it, or maybe you like it that way. When I present this to the council, the overarching goal will be one slide by itself.

The corollary goal will be a separate slide by itself, and then I would -- If you guys agree, I would have a slide with the nine sub-goals, and then I would have slides, and this may be overkill, but we've got to get these guys thinking about this.

I would then have a slide for each sub-goal that has these very, very draft objectives, or we could just not present them with the objectives and say you guys need to -- I don't like this approach, but you guys need to come up with your objectives, because just it's really better to give them a seed to work from, and then they do a great job.

KEVIN MCCARTHY: Bill, I think that approach is perfectly reasonable. I don't know whether or not you want to go through the objectives of all of them, and you might pick out a few that the group feels are a little more fully developed and then note that we're still working on the other ones, and, in fact, we're -- I suppose, at this point, it's a draft, and everything is still up for discussion, but, at least the ones that are a little farther along, you might say, as an example. I don't want to get into the weeds of how you present this stuff, but I think where you're headed is a good approach.

BILL ARNOLD: I would present them as examples, that here is some example objectives for that goal, and I think that, like under 1, these nine or whatever they are, that's -- I mean, we don't need to delete them, but I would not present all nine, and I might present three.

Then, under 2, I could say -- I could present two or three of these, exactly as they are, which is hardly ideal, but I could say, look, these are very, very rough examples of what we would consider to be objectives, or we could try to tweak these, one

or two of them, and you could give those tweaked ones to me as examples, better-worded examples, of what an objective would be, because, as we agreed, forage fish is not an objective.

The same all the way through, and, you know, we don't need a bunch of examples, but I just want to let them know that this is kind of what a reasonable objective would be for this goal, and we, again, want to make sure that they are contributing heavily to these goals and objectives. They are their goals and objectives. They are theirs, and they're not ours. They are theirs.

GRACIELA GARCIA-MOLINER: That's what I was going to ask you, because, if you don't present all of them, then you're doing double work, because you already have them here, and then the council will be putting them in at the same time, and so it's kind of -- If you present them all, then they might add to these, or tell you that they don't really want to deal with 1c, or whatever it is.

BILL ARNOLD: Okay, and so I'm fine with that too, and we don't have to do anything with these, and you could leave this exactly as it is, and I would simply tell them that this is what we brainstormed, and this is strictly brainstorming ideas, and they're not properly worded, and you don't want to put too much into it, but they do provide a good set of examples of what your objectives might include, and you might identify some that you don't want to include, and you might want to re-word them, and you might want to add to them, et cetera, et cetera. That's kind of -- I don't have a problem going forward with what we have here.

ORIAN TZADIK: Bill, I have a suggestion.

BILL ARNOLD: Okay.

ORIAN TZADIK: Considering the schedule that Graciela laid out for us yesterday, in that we are having a council meeting at the end of this month, and then a second council meeting less than two months later, and you had mentioned that you wanted this group to meet again in between those two times, and why not just -- The other document that we just put together that had kind of the rough outline I think is in a much more presentable form, and that is something that we could definitely present to the council at this meeting in June.

Maybe something along the lines of what you just said, where you said, look, this is our brainstorm for the goals and objectives,

which we plan to present to you in August, and just considering the short turnaround and everything, and then we have a second call to really beat through each one of these bullet points.

BILL ARNOLD: Okay, and so I have a suggestion off of that, Ori. Under those circumstances, I'm not comfortable giving them a table of contents without some framework within which to consider that. That's the goals, and it's not necessarily the objectives, and so maybe we should just present the goals and the sub-goals and tell them that we want them to look these over, here at the meeting, and let us know, give us some feedback.

Then we will go back, and we will have a meeting in between the two council meetings, where we will start working up a list of objectives, and then we can set these objectives aside for now, because I think everybody is in agreement that many of these objectives are not ready for primetime, and so let's do that, and then, in August, we can get into a discussion of objectives. That's fine with me.

ORIAN TZADIK: I agree with that approach.

BILL ARNOLD: Who else?

KEVIN MCCARTHY: That seems reasonable to me.

BILL ARNOLD: J.J.?

JUAN CRUZ-MOTTA: I agree.

ALIDA ORTIZ: That sounds good to me, also. It makes sense.

TARSILA SEARA: Yes, I agree with that.

BILL ARNOLD: Stacey?

STACEY WILLIAMS: Yes, I agree.

BILL ARNOLD: Sennai?

SENNAI HABTES: Agreed.

BILL ARNOLD: All right. Let's work that up. So we're going to just have -- We're going to have the overarching goal, and we're going to have the corollary goal, and then we're going to have nine sub-goals. Of course, we want to keep this. We want to set it aside, and that's what we're going to present to them,

and I would like to get that document built right now, because we're not going to vote on it until we can look at it.

GRACIELA GARCIA-MOLINER: So leave the overarching goal and then just delete all the bullets?

BILL ARNOLD: But make sure you've got a backup copy of this right here.

GRACIELA GARCIA-MOLINER: She's going to save it now as the presentation to the council or something like that.

BILL ARNOLD: All the bullet points go away.

GRACIELA GARCIA-MOLINER: You want them deleted, right? You don't want anything under each --

BILL ARNOLD: All we want is the 1 through 9. You can put that all in a common font, if you wish, or a common size. I forgot there were thirteen.

SARAH STEPHENSON: Can I just make a quick observation?

BILL ARNOLD: Yes.

SARAH STEPHENSON: I think Number 13 is missing a word after "research", and so to blank an assessment, and you need like a verb or something.

GRACIELA GARCIA-MOLINER: To inform or to be included?

BILL ARNOLD: Conduct. How is that? Up top, where it says "FEP", get rid of "overarching", and get rid of "and objectives". You could put goals and sub-goals, if you wish. All right.

KEVIN MCCARTHY: I suggest, in 13, that we don't limit it to a single assessment. How about we say, "conduct assessments"?

BILL ARNOLD: Beautiful.

SARAH STEPHENSON: And just fix Number 12 to "incorporate".

BILL ARNOLD: Yes. Okay.

GRACIELA GARCIA-MOLINER: Either all of them have a period at the end or none of them do. Picky.

BILL ARNOLD: Good. I like pickiness. We need something in between "management" and "strategies" in 8, maybe an extra space. Okay. Now we can look them over. Everybody take just a minute and go through them.

ORIAN TZADIK: For Number 1, is it "of a changing ecosystem"?

BILL ARNOLD: Yes.

SENNAI HABTES: For Number 2, "enhance ecosystem resilience within the context of changing ecosystems".

BILL ARNOLD: Okay.

ORIAN TZADIK: We can do that in the first one too then, to keep it consistent, I would say.

KEVIN MCCARTHY: Did we resolve the use of "enhance" in 1 and 2?

BILL ARNOLD: No, but we need to.

KEVIN MCCARTHY: I mean, insofar as this is presented as a draft, I don't want to spend a bunch of time on it, but I'm just not sure if we had a different --

BILL ARNOLD: It's very misleading. I like "promote", but that's just my thinking.

ORIAN TZADIK: I like "promote".

BILL ARNOLD: I am not sure that "promote" is great. What do you guys think? What is the FEP going to do?

STACEY WILLIAMS: Maybe, for Number 1, "provide guidance", or something like that. I like "promote" in the second one, but maybe "provide guidance", and I don't know.

BILL ARNOLD: How about "provide guidance regarding"?

STACEY WILLIAMS: Regarding, yes.

BILL ARNOLD: Is that okay?

TARSILA SEARA: Isn't that what we're doing for all of them?

KEVIN MCCARTHY: I agree, Tarsila. When you read the corollary goal, it's to provide a framework that promotes the following sub-goals for integrating ecosystem science into their

decision-making, and so we need to -- We either get rid of corollary goal or we think of it in terms of -- All of those sub-goals in terms of integrating ecosystem science into the decision-making process.

BILL ARNOLD: Number 2, Kevin. So "provide guidance regarding" is not the way we want to word that, is my understanding of what you're saying, and I would agree, but what do we put there?

TARSILA SEARA: I think something along the lines of, I don't know, but maximizing or --

BILL ARNOLD: Well, remember that the FEP doesn't do anything except provide guidance.

TARSILA SEARA: Right, and so this is the aspiration, right, and so that's what we're hoping that this guidance will result in, and so I think the idea is that we want to increase, or maximize, resilience, and that's the way I understand that, and I don't know if those are the best words, but I think this is --

BILL ARNOLD: Okay. It's a goal. Not there, but Number 1, I think.

TARSILA SEARA: Right.

BILL ARNOLD: 2 was fine, and we're looking at 1. Then we would get rid of "guidance regarding", right?

TARSILA SEARA: Yes.

BILL ARNOLD: Is that what you want?

TARSILA SEARA: It works for me. I don't know if that's the best -- I mean, that's right idea, and I don't know if that's the best wording, but I'm happy with it.

BILL ARNOLD: Well, let's go down to the other ones, and we can come back. Go ahead, Kevin.

KEVIN MCCARTHY: Well, I don't disagree with those as goals, but our stated corollary goal specifically says "integrating ecosystem science into the decision-making", and so increase human community resilience is sort of a different kind of goal, and I don't have a problem with it, but we need to -- We're specifically saying the following sub-goals are all about integrating ecosystem science, and so we either need to re-work the corollary goal or we need to re-work the sub-goals.

BILL ARNOLD: So I would just say one thing real quick, Kevin, and that is the corollary goal doesn't drive the sub-goals. The overarching goal can also have an influence on the sub-goals, and they can relate directly to the overarching goal.

KEVIN MCCARTHY: That's fine with me, but we're specifically saying "the following sub-goals" within the corollary goal, and so we need to re-word it somehow, or they don't -- One does not follow the other, as far as I am reading it.

BILL ARNOLD: Okay. My suggestion would be get rid of "that promotes the following sub-goals" and provide a framework for integrating ecosystem science into the council's decision-making. That's just a thought. Does anybody agree with that?

KEVIN MCCARTHY: I don't have a problem with how we -- I don't have a particular concern about how we do it, but we just need to make sure that we don't make a statement that the next thirteen statements don't logically follow, and so, if we say to get rid of the sub-goals, that's fine. At least it's a draft.

BILL ARNOLD: Yes.

JOCELYN D'AMBROSIO: Then we get to the point that I made that kind of got us into changing the corollary goal, and so, if you -- I agree that the sub-goals don't meet the stated purpose of integrating science, but maybe you just say the corollary goal is to provide the framework, and then just sort of try to define that framework, and so it's to provide the framework that promotes the following sub-goals, and then you can end the sentence there, and then all the sub-goals would be to increase community resilience or to promote ecosystem resilience, and those are your sub-goals of what could result from council management.

I think you have to link it back to this idea that the FEP is kind of a framework document, or a guidance document, or a source document, that doesn't have management outcomes, and that there's a second step, because some of these look like management outcomes, unless you make it clear that you're providing some sort of framework to promote the council using this information to meet these sub-goals, but I'm not exactly sure how to word it.

BILL ARNOLD: All right, but you want the sub-goals to be tied to Bullet Point 2 and not Bullet Point 1. Bullet Point 1, the

overarching goal, kind of stands alone.

JOCELYN D'AMBROSIO: Right. I guess that makes sense, but I think you would put in the sub-goal about creating the framework to get at the point that some of these look like the FEP itself is going to have these outcomes, instead of inform the council doing something that might have these outcomes.

BILL ARNOLD: All right, and so we'll leave the overarching goal and the corollary goal alone. We'll leave them as they are.

JOCELYN D'AMBROSIO: But I think you need to tweak the corollary goal, because the sub-goals are narrowly defined, and so, if there's a way to broaden the defined sub-goals, so that it covers what the sub-goals are. Right now, the sub-goals are too narrowly defined.

BILL ARNOLD: Do you have some wording in mind that you can help us out with, Jocelyn?

JOCELYN D'AMBROSIO: I don't know if this is too short, but you could kind of end it after "provide a framework that promotes the following sub-goals". Then, if you delete everything else, you don't have to define what those sub-goals are, but I don't know if you're missing something in what's deleted there, like the idea that it's to inform council decision-making, and I don't know if that's implicit, and it probably is.

BILL ARNOLD: It is. That's our job, is to inform the council, and nothing more than that. These will turn into their -- Go ahead. Sorry, Ori. Go ahead.

ORIAN TZADIK: I am just saying we're not losing it, because it's kind of said already in the overarching goal. I mean, it's slightly different, but I think that, if we just get rid of it, per Jocelyn's suggestion, especially right now in the draft form, I personally would be comfortable with that.

BILL ARNOLD: Anybody else?

KEVIN MCCARTHY: I think that's a reasonable first draft, to drop what's highlighted.

BILL ARNOLD: Anybody else? You can even delete down to "FEP sub-goals". Okay. Now, technically, each numbered point should have a semi-colon after it, with a period after the Number 13 one, but I'm just going to let you guys do that, if you want. Okay. What else?

ORIAN TZADIK: Bill, I've got a couple of points. The first is a question for Tarsila. Does human community resilience have a defined -- Some sort of definition kind of in socioeconomic literature? Is that something that somebody could actually point to?

TARSILA SEARA: Yes. There are definitions. There might be some debate, but there are definitions that could be provided, yes.

ORIAN TZADIK: Okay. I just wanted to make sure that we weren't using a word that wasn't kind of just something that we made up to mean like robustness, or something. Okay. Then my next questions, and I have a couple of questions for the group, is that I'm wondering if some of these should be sub-goals of the other sub-goals, if we could combine some of these, basically, and, in particular, I am looking at 3, 5, and 7. I will just list them all out. 3, 5, and 7, and then 6 and 9, and potentially 10 and 11.

JUAN CRUZ-MOTTA: I agree with Ori, at least the first three that he suggested to be linked, or merged.

BILL ARNOLD: I don't agree. I don't agree on either point.

KEVIN MCCARTHY: Ori, would you repeat those? It was 3, 5, and 7, and then there was 10 and 11 and --

ORIAN TZADIK: I wrote them in the chat box.

KEVIN MCCARTHY: Thank you.

ORIAN TZADIK: To Bill's point, I think that they would need to be modified, in order to be put together into one, but I just saw those as having common themes that could potentially be put into one each.

SENNAI HABTES: I agree with Bill, I think both from a management, but also a regulatory standpoint, and I think having them as specific goals is important. For instance, from a management standpoint, I think, with 3, 5, and 7, status and functionality I think has a different component than linkages, as well as identifying species, and those all, from a regulatory standpoint, are unique functions of a management council, and I think combining those becomes problematic and unwieldy, when trying to break out priorities for a management council.

BILL ARNOLD: Anybody else?

TARSILA SEARA: I just have a comment about Number 5, and maybe this could also be a bigger question here, and so the way I am understanding ecosystem, and so this definition of ecosystem, in this context of ecosystem-based management, is we are including the human dimensions within this idea of ecosystem, and is that correct to assume?

BILL ARNOLD: Absolutely.

TARSILA SEARA: Okay. I just wanted to make sure that, there, when this is presented, since we don't have the objectives, that it is clear, and maybe we don't necessarily need to change the language, but just I want to make sure that it's clear, when it's communicated, that, when we're talking about ecosystem linkages, we are also talking about links between the biophysical system and the fishing communities, the human dimensions, and so that's not lost, because I think that that's such an important point, understanding those linkages, and it's going to be, at least how I see it, a major goal of all of this. I don't know if we necessarily need to change it, but I just want to make sure that it is communicated, and does that make sense?

BILL ARNOLD: Absolutely, and maybe I'm just too close to this, but my thinking on an ecosystem is it has to include the human community, and, when we write the fishery ecosystem plan, I think up in the -- I don't want to go back to that, but, up in the introduction, we would say -- We would have a section of what is an ecosystem, or what is the ecosystem, and we would describe it and say it's everything from the bacteria to the humans and beyond, everything, something along those lines.

TARSILA SEARA: Right. I'm not worried about the final document, but just, when this is presented as-is, and that's the only thing that I am saying, is I just wanted to throw that out there.

BILL ARNOLD: Okay. All right. I agree with you that I don't think we want to define what the ecosystem is here. Even in our overarching goal, we really lay that out, the economic, social, and cultural characteristics, and the communities dependent upon them.

TARSILA SEARA: Right. I mean, it makes total sense to me, but I just want to make sure that that's not lost in just maybe not having more explicit language, but, if you're confident that

that's going to be understood, I'm happy with that.

BILL ARNOLD: I won't be the only one at the meeting, and so help me out, and we'll make sure that it's understood, that our ecosystem includes the human component, if there is any confusion, but I think we're all in agreement on that.

TARSILA SEARA: Okay. Sounds good.

BILL ARNOLD: Another thing I would say is, at this point, personally, I would rather be a splitter than a lumpers and keep these separate, and that's another thing, because I would remind you guys that these are just recommendations, as a start point, and it is a start point on a process of developing goals, sub-goals, and objectives, and there's a long way to go, and so I think giving the council more information, in a more discreet manner, will help us to communicate and help them to think and advance this information and this challenge that they have to address.

ORIAN TZADIK: Especially after hearing Sennai's comment, I think that makes sense.

BILL ARNOLD: All right, and so we're past that. Liajay has a few more semi-colons to put in there, but that's okay. In the meantime, what else? Okay. I can sleep tonight. Thank you, Liajay. All right. What else, guys?

SENNAI HABTES: I have a question about 13. Do we want to leave the wording as "revisions", or do we want to possibly use something like "management priorities" or "strategies", rather than stating that the goal is to only come up with revisions?

BILL ARNOLD: I think we could give a closer look to 13. I think we should talk it over a little. We were kind of specifically talking about revisions, and maybe that's not a good sub-goal, and maybe it is. What do you guys think? It seems like it's like two or three different topics blended into one.

ORIAN TZADIK: Sennai, what was your suggested wording?

SENNAI HABTES: Either "management strategies" or "priorities". I just feel like, one, stating only revisions means the only goal is to make changes to current strategies, whereas there could be policies or strategies that are being used that work fine, and we want to promote them.

ORIAN TZADIK: What about adding the word "reassess", "identify, reassess, and recommend management strategies"?

BILL ARNOLD: Well, we haven't assessed them, and so you might want to just say "assess". "Reassess" implies that -- Keep in mind what this was all about. It was about pushing information up the chain to get Magnuson revised, so that we can better achieve an ecosystem-based fishery management approach. That may or may not be what you want, but that's what we were talking about here.

SENNAI HABTES: I remember, and I agree that that's a priority, but I think that we need to maybe generalize it, so that there are other things incorporated. By saying "strategies", rather than "revisions", we're including changes, but also promotion of things that are working. In my opinion, sometimes, with things like this, you get a little more done with honey than you do with vinegar.

BILL ARNOLD: Okay, and so I don't like the word "strategies", because that's like a council strategy for management, and that's not really the framework within which management strategies can be developed and employed, and the MSA constrains what strategies can be employed, and we're talking about how can we modify the MSA to allow alternative strategies, or something along those lines, and that's what I am thinking anyway.

I also think, while I'm talking, that that part about "foster the necessary research to conduct assessments", we've got assessments right above there, and I don't think we need that in there, and I don't get the part about the "foster the necessary research", and so I don't understand everything after the parenthetical statement.

SENNAI HABTES: What about "identify, assess and recommend more appropriate management policies", or do we simply want to make it about the revisions? If that's the case, why not just state "implement revisions", or "provide the necessary information towards implementing MSA revisions"?

BILL ARNOLD: Real quick, can we get rid of the text after the parenthetical statement, or do you guys know better than I why that's in there?

SENNAI HABTES: I'm fine with its removal.

BILL ARNOLD: Any objections to taking that out? Okay. Let's delete that. Okay. Nice. Then a period would come after the

close parentheses. All right. So let's work on the first part of that.

Identify, assess, and recommend, and I would not say "more appropriate", and that might not go over well at the higher levels. We could say something along the lines of "alternative" or "additional".

ORIAN TZADIK: What about just "promoting adaptive management strategies or policies", and forget the whole beginning part. It's just "promote", and then that's the whole goal, is to promote -- I mean, adaptive management includes all these things.

BILL ARNOLD: Okay. I am not opposed. Others may be, and that's okay. Go ahead and lock it in there, Liajay, and we'll see what we think. Just start 13 with "promote".

GRACIELA GARCIA-MOLINER: So you want "identify, assess, and recommend" out, right?

BILL ARNOLD: Yes, and I think that's what Ori had in mind.

ORIAN TZADIK: Yes. I was just saying to just -- Exactly. Just "promote adaptive management policies".

GRACIELA GARCIA-MOLINER: So take out "identify, assess, and recommend".

BILL ARNOLD: Yes. All right. What do you think?

MARIA LOPEZ: I think the same 13 can be used also to promote adaptive management, and I know that you said that you didn't want to use "strategies". In reality, what you want to do is you want to bring these ecosystem considerations into the decision-making process, and that goes --

BILL ARNOLD: That's not what this one is about.

MARIA LOPEZ: I know this is not what 13 says, but 13 is at a higher level.

BILL ARNOLD: 13 is at a higher level, absolutely.

MARIA LOPEZ: So something that would be at a lower level that would -- Because your goal is for the council to put this into consideration for the decision-making process, and I don't know how to word that, but I feel that should be in here.

BILL ARNOLD: So we could add another sub-goal, if that's what you're thinking. I would put it after 12. Okay. What do you have in mind, Maria?

MARIA LOPEZ: I was just thinking on the same line, because what we want is for this process to help us identify adaptive management strategies that the council could consider, and so something on that line, but I know that you said that you don't want the word "strategies" in there.

BILL ARNOLD: Well, look at 8.

MARIA LOPEZ: Maybe you can add something in there too, and we don't have to do a separate one.

BILL ARNOLD: Well, I thought you said something along the lines of apply ecosystem concepts in the management process. Of course, look at 12.

MARIA LOPEZ: Bring ecosystem considerations into the decision-making process.

BILL ARNOLD: Yes. Let's write that down, and let's see where we go with it. The decision-making process.

MARIA LOPEZ: Right, because this ultimately is what you want to do with this FEP.

BILL ARNOLD: Okay. Comments?

MARIA LOPEZ: That's just a suggestion, by the way.

BILL ARNOLD: Yes. Thank you. Liajay, while we're thinking about that, on Number 9, get rid of "to", and just make that "improve the data". That makes it consistent with all the other ones. Thank you. All right. What do you all think about the new 13?

ORIAN TZADIK: I like it.

JUAN CRUZ-MOTTA: The thing is that 13, even while different from 12, is in the same spirit, that we use -- It gives the impression that we're going to use ecosystem considerations as information to make the decision, right?

BILL ARNOLD: To influence the decision and not to make it.

JUAN CRUZ-MOTTA: Okay. In my opinion, the ecosystem approach should be the basis for the -- It shouldn't be ancillary information to influence the decision, but it should be the basis of the decision.

BILL ARNOLD: Well, we're not ready to make that decision for the council. We're not ready to tell them that ecosystem should be the basis for your decision-making. Remember, these are their goals and not ours.

JUAN CRUZ-MOTTA: But we're recommending that, right?

BILL ARNOLD: Yes.

JUAN CRUZ-MOTTA: We recommend this, but it's okay, Bill, and I think we all agree on the spirit of the message.

BILL ARNOLD: Okay. Keep that big word behind it in mind, "draft". We really need to -- We want to guide them to their decision-making on these goals and objectives. Ori, I think you wanted to say something?

ORIAN TZADIK: All I said was that I agree, and just, after hearing J.J. speak, I just -- I mean, I agree with the way that it is here for now.

BILL ARNOLD: Everything is here for now. All right. Anybody else?

JUAN CRUZ-MOTTA: Just, for the record, perhaps we will develop these further in future meetings, but, at some stage, or at some point, as an objective or a goal or a mission or a vision of what we're doing, we should start telling the people that we are actively looking for new ways of assessing what's going on out there, which is like what interests me the most, and especially because of the reality of our fisheries in the region.

By definition, our fisheries are multi-specific, and a small scale, but, anyhow, this is just for the record, but I would like really, in the future, to have a topic on what we can do new, instead of just providing information for the system that we already have.

BILL ARNOLD: Okay, but that's something that you would take to the council and not us.

STACEY WILLIAMS: Bill, could I give a suggestion? I don't know if it's going to be accepted, but 13 and 14 -- I think like an

end-goal for 13 would be to promote adaptive management policies, and so wouldn't that be -- Couldn't those two statements be combined, like bringing ecosystem considerations into the decision-making process to promote adaptive management policies?

BILL ARNOLD: I don't think that's what they were meant to do. Bringing ecosystem considerations, for example, when you're looking to evaluate a closed area, or a closed season or a size limit or something, you might want to put that into the context of a larger ecosystem.

Adaptive management is more of a dynamic process, where you are constantly responding to new information to revise your policies, because "policies" is a key word in there, and policies aren't decision-making processes, and they are guidance for making decisions, but they're not the decisions. 13 is a decision-making process, and 14 is more of a policy process. That's the distinction that I would make, and I think it's an important distinction, but you guys may not agree, and so let's hear it.

MARIA LOPEZ: I was just thinking that -- Remember the example that I mentioned yesterday. When we set the ACLs for parrotfish, we added ecosystem considerations, because, in the buffer reduction that was added to their ABC, we actually considered the role that the parrotfish had on the ecosystem, and so this is what I'm talking about. That decision about how the parrotfish was going to be managed had that ecosystem consideration into it, and so this is just an example of what I am referring to, but it could be many different things.

BILL ARNOLD: That's right. That's right. That's one example of what we're talking about with 13, which is not the same as 12. With 12, you get an assessment, and you use ecosystem considerations to develop that assessment. In 13, after that assessment and the recommendations made by that assessment, the council then may take ecosystem considerations into account while they determine what the optimum yield for that fishery should be, and it could be less than what the stock assessment would direct, and so that's an example of why 12 and 13 are not the same thing. 14 is completely different, because we're talking policy, and that's my take on it.

ORIAN TZADIK: I agree with what Maria just said, and that's how I was thinking about it as well, where you have ecosystem considerations when you're -- The parrotfish is a great example of that. Then the adaptive management, like Bill is saying, is

a policy, is promoting policy, but it's also about the idea of kind of revisiting your decisions once they have been made, and kind of just ensuring that the appropriate stakeholders are brought to the table each time.

BILL ARNOLD: Anybody else?

JOCELYN D'AMBROSIO: Bill, I understand -- Obviously, I'm not a member of this committee, and I'm just here to provide legal advice, and some of the stuff that I mentioned earlier about process was along those lines, and this is more just trying to make sure we're being clear about what we're doing.

While you all were working on this, I kind of was looking at these numbers, and I have some thoughts on some of them, or aiming towards certain goals, and some of them are aiming towards others, and I don't know if it's helpful to share those thoughts, but I do think that some of them are like describing what information might be in an ecosystem plan and then some of them might be describing outcomes or how the council could take that information and use it. If it's helpful, I could share that thinking with you. If not, I realize this is a draft, and you guys have put a lot of work into making it as clear as possible in this way.

BILL ARNOLD: Okay. Well, I'm not disagreeing with you, Jocelyn, but I think that we -- Personally, I think we've done a very good job of getting a rough draft, rough first draft, as a guidance document for the people that actually have to develop these goals and the objectives, and that's the council and whoever they assign to do so.

Now, maybe we go to the meeting and they say, look, we want the TAP to come back with a complete list of goals and objectives that we can accept by motion, and maybe they will say that. I doubt it, but they could. More likely, they're going to say, okay, we like it, and it's a good start point, and it gives us some good guidance, and now we're going to take it and run with it.

That's why I keep saying that I wouldn't get too crazy about this, and I feel like this is pretty good guidance to get them started, and then, hopefully, by the August meeting, we'll be able to make some serious progress on finalizing the sub-goals and objectives. That's the way I would suggest you look at it, everybody.

I will take that silence as agreement. What I would like to do

is develop a motion, and vote on it, to submit this document right here that's on your screen to the council at their upcoming meeting for consideration.

SENNAI HABTES: I was going to make the motion, but, if there are comments, I would say do that first. No? Okay.

BILL ARNOLD: We can go ahead and make the motion and second it and then discuss. There can be additional discussion.

SENNAI HABTES: Okay. **My motion is to present the council with the draft goals and sub-goals for the FEP developed at the June 2020 EBFM TAP meeting.**

BILL ARNOLD: All right, and then you add that same task, that the Technical Advisory Panel moves to present, the same thing you have in 1. Very nice. That motion was proposed by Sennai, and we do not have a second.

TARSILA SEARA: I second it.

BILL ARNOLD: Thank you, Tarsila. Okay. That's the motion on the air, since we don't have any floor. Any discussion? If not, I would like to take a voice vote. **Those in agreement, please say aye; those opposed please say nay. As far as I can tell, the motion passes unanimously.**

JUAN CRUZ-MOTTA: Bill.

BILL ARNOLD: Go ahead.

JUAN CRUZ-MOTTA: I would like to abstain from this vote.

BILL ARNOLD: Okay.

JUAN CRUZ-MOTTA: Thank you.

BILL ARNOLD: **Seven agreed and one abstention, and the motion carries.** All right.

GRACIELA GARCIA-MOLINER: Do you want to ask for the reason for the abstention, or do you want to just let it rest, the reason for the --

BILL ARNOLD: I don't mind asking. J.J., if you want to provide a minority opinion on your abstention, please do. Absolutely.

JUAN CRUZ-MOTTA: Basically, related to my previous comment.

Still, this list of goals, in my opinion, do not convey the idea that we will be recommending the council to look for new ways of assessing the fisheries system.

BILL ARNOLD: All right. I want to get that in writing, J.J., and I want to be able to present that to the council as the first step in making them aware of this need, or perceived need, and so, if it's okay with you, I would like to actually capture that under the motion, under that right there, and you don't even have to put a name to it, but the explanation for abstention, or something like that, and what J.J. wants to say, and he can include his name or not, but this is important information, and I think it should be included and presented to the council.

JUAN CRUZ-MOTTA: I don't mind that you put my name on there. I mean, you can say, in my opinion --

BILL ARNOLD: After the colon, say, "in J.J. Cruz's opinion", and then let her know what it is, J.J.

JUAN CRUZ-MOTTA: This set of goals do not convey the idea -- Sorry, and I sound really bad about the language that you normally use in these --

BILL ARNOLD: You're doing fine, J.J. Let's just get it down.

JUAN CRUZ-MOTTA: That the TAP, the EBFM TAP, should be recommending the council on new ways to assess the fisheries system of the U.S. Caribbean. Okay. You don't need to take note on this, Liajay, but I reiterate that Number 12 or 13, the last one we have, got modified, and so it ended up being less to recommend the council to make decisions, but they take into consideration some ecosystem consideration, whatever that means, some ecosystem considerations, but that's why -- It's an abstention, and I'm not against it. I hope it's fine with you.

BILL ARNOLD: I'm fine with it. You have every right to make your statement as the minority opinion, J.J., and I support it 100 percent, and I think it's important, in my opinion, that the council be made aware of this perspective, and, if anybody on the TAP has a problem with this, then we should talk it over now.

MANDY KARNAUSKAS: I have a question, and this is just for my own education, and so I hope that folks from SERO are here, and is in the council's purview to suggest a way in which we assess the system, or is that a Science Center question? I mean, if we

wanted to use different models, different approaches, tomorrow, could we do so without the council weighing-in? I am asking, because I don't know.

JUAN CRUZ-MOTTA: Mandy, is that a question for me? If positive, could you please repeat it, because I didn't get it. Thank you.

MANDY KARNAUSKAS: I'm happy to repeat it, but I think it's more of a question for SERO folks. I am asking, if we wanted to move to new ways to assess the fisheries system, does that guidance need to come from the council, or is it something that scientists at the Science Center, for example, could decide on their own? I mean, what's to prevent us, for example, from, next week, using multispecies or an Atlantis model to assess Caribbean fisheries, if we thought that was a good idea?

BILL ARNOLD: That doesn't have to come from the council, but it does end up having to go through the council, Mandy, because the SSC has to evaluate the assessment outcomes, and they may say, sorry, we don't like the method, and so we're going to reject it, and that's only a recommendation. Like us, they can only recommend, but they can recommend to the council that the assessment not be accepted.

MANDY KARNAUSKAS: Okay. Thanks.

KEVIN MCCARTHY: Mandy, are you giving us the idea that this last sentence here on the page we're looking at suggests that the council might want to get in the business of telling the Science Center how to run assessments? Because it could be interpreted that way.

MANDY KARNAUSKAS: That was a little bit of my concern, and I don't want to -- I think J.J. has a valid concern, but I guess my question is, is the council the appropriate pressure point for that concern, and, yes, I was a little bit worried about that interpretation.

GRACIELA GARCIA-MOLINER: If I may, that is specifically one of the issues that the council is having and is receiving from stakeholders, because the single species, and even with the data-limited assessments that are being conducted in the U.S. Caribbean, it doesn't really tell you about the situation with your marine resources, with your fishery resources out there, and so they have been looking at other ways of doing these assessments.

I think I understand what J.J. is saying. By coming back to the council and saying, well, we thought we were going to be talking about evaluations in terms of the ecosystem that will yield results in terms of your fishery resources, but, the way that it's being set up, it's still doing business as usual, and so, in a sense, the council is looking for different ways, and it's getting that information from its stakeholders, and this is how the whole ball got rolling, and not only because of the EBFM policy, but also because of information that has been brought up to the council.

I mean, we're talking about three-hundred-and-something species that normally come into your fisheries that are prosecuted by X number of gears, et cetera, and it's different, and the environmental conditions are completely different from anything that we see in any other parts of the country, and the policy, as it stands, really doesn't address finding a response for the situation that we have here. Annual catch limits do not work, and things like that, and so this is a new approach that needs to be taken into consideration and evaluated.

MANDY KARNAUSKAS: Okay. Thanks. That was very helpful, and, again, I agree with the concern, and I just asked out of my own ignorance of how that shifts and where it needs to happen, and that's all.

JUAN CRUZ-MOTTA: Can I add something?

BILL ARNOLD: Of course. Go ahead, J.J.

JUAN CRUZ-MOTTA: First of all, I would like to apologize if my knowledge of the legal -- I am not aware totally of the legal system and who tells who to do -- Staff or -- My apologies if I what I said has some legal implication that I am not aware of.

What I want to say is my position is based from an ecological point of view, right, and, after sitting in the SSC for three years and interacting with the various people from the management authorities and interacting with the local fishers and interacting with the other people that use our resources, natural resources, they mostly depend on the reef.

I truly believe, from an ecological point of view, that we should have a comprehensive multi-specific view of the problem. If you ask me now, in 2020, where are we going to -- What will be the final point of this project that we started, I am not exactly sure, and this is part of research that is ongoing.

When this group formed, the TAP, I saw this as an opportunity to develop these ideas, and it started as an informal group, with a bunch of people with similar interests, and we wanted to move in this direction, right, and that's why I think this will be the appropriate forum to bring these ideas, and I am saying this because my intention is to propose new ways to look at our systems, and, when I say in our system, it's not only the natural system.

It's the people that depend on those systems and the people and the relationship that the people of Puerto Rico, at least, and I won't talk for the USVI, and I have had not the honor to interact with the fishers over there, but it's very particular.

It also happens in many dimensions, many variables, and whatever I say is to try to understand that complex system using a different approach. By no means is it a critique to whatever has been done or to all the magnificent work that has been done up to date, and it is by no means -- My intention is not telling the Science Center -- I mean, when you see all the people that have got years and degrees of experience that you cannot ignore, and it's not a critique to them.

It's just trying to come up with a way of looking at a very particular system that is highly diverse, the Caribbean, if you take out the Pacific, and this is a diversity hotspot, and so, in my opinion, my very humble opinion, you would need a different mindset to try to understand what is going on here, and so, again, I want to reiterate that this is not -- My proposal is not a critique to anybody, and it's not a disregard for all the magnificent work that has already been done, and I want is to build on that work and try to come up with a new way to look at things and another consideration, from the research point of view, right?

When you go and do -- For example, Mandy and Kelly showed us very nice examples from the California Current, right, and the application of the ecosystem status report on decisions they made over there, and take into consideration that those guys -- The amount of money that has been invested in research and knowledge of their natural system, is four or five orders of magnitude above what has been spent on the Caribbean, and that's another important factor that we need to take into consideration.

This new way of looking at assessing the ecosystem needs to consider that we don't have, and we won't have, the same amount of resources that the Gulf of Mexico will have or the west coast

of the United States will have, and so, just to summarize, my apologies if somebody believes this is a critique, but it's just opinions that I truly believe, and I might be mistaken, and I would -- If somebody shows me that I'm wrong, I will happily desist from my position, but I truly believe, at this stage, based on the information that I have, that we could advance in a different direction to the one that we currently have. Bill, thank you very much for your time.

KEVIN MCCARTHY: Bill, let me respond. J.J., absolutely no offense taken on my part, and I can't speak for the Science Center, but I think it's fair to say that there is no offense taken, and I know none was intended, and I never even considered it. I never even for a moment considered what you are trying to do as criticism of what has been done in the past.

I think it's fair to say that we fully support your efforts and welcome any advances. I think what Mandy and I were getting at was sort of a procedural kind of thing and not at all a critique on what you and the rest of the folks on the Lenfest project are doing, not in the slightest. I think what you're doing is great, and I'm fully supportive of it, and we would welcome advances in the way fisheries are managed in the Caribbean and everywhere.

To your other point about resources, I absolutely feel your pain. I look at what goes on in the Gulf of Mexico, and I think, you know, if I could just have a sliver of the money, or not me personally -- Well, that would be nice, but, if I could just have a sliver of that money for Caribbean research, what a gamechanger, and so no offense even -- It didn't even enter my mind, and so don't think that for a moment. I absolutely agree. If we could get a few dollars down there, what a change we could make.

JUAN CRUZ-MOTTA: Thank you, Kevin.

MANDY KARNAUSKAS: I will just chime in and say that I absolutely took no offense to your comment at all, and I completely agree with you, J.J. What I was trying to get at is what's the bottleneck, and do we need the council to direct us to do this, or can we just start working on it tomorrow, because we agree it's a good idea, and so that was the procedural detail that I wanted for my own understanding.

Do we need to wait for the council to direct us on this stuff, or can we, as scientists at the Science Center, agree that we need to move in this direction and start working on it with you

and other collaborators, and so that was the verification that I was trying to make, and, again, to fill my own ignorance on the procedures.

JUAN CRUZ-MOTTA: Thank you, Mandy.

BILL ARNOLD: J.J., I think you should give a presentation to the council on what you consider these alternative approaches to be and get them thinking about it, and I think we're always looking to advance our methodologies, and so you've got nothing to lose there. That's why I thought that it would be a good idea to bring your explanation to the council as the first step in setting up that opportunity for you to even more extensively explain this.

JUAN CRUZ-MOTTA: The highlight -- Not the highlight, but, yes, the highlight of my summer was to present this, and this was what I was preparing -- I am still preparing, but I was preparing this for the presentation at the National SSC conference, and remember? For the SSC was going to join a meeting in Alaska, because I really wanted to debate with other people working on EBFM my ideas and subject those ideas to critique from the other experts in this topic, which includes Mandy.

To present my ideas and to receive as many critiques as possible, because -- For two reasons. One, my colleagues might show that I am totally missing the point, and I am going in the wrong direction, and there is no sense of spending more time going in that direction, or they could give feedback on my ideas and come up with something much, much better, and so, Bill, of course, eventually, I'm going to talk to the council about this. However, I would like to expose to the experts these ideas, because these are my ideas that I have discussed with two or three other colleagues that we are in the same page.

Remember that article that I sent you, that I sent you guys, the last article that I sent you, about the multiple goals and how can you achieve multiple goals for this different research, and like increasing biodiversity, but, at the same time, increasing biomass of commercially-important species.

It's a group of people from that list of authors that were working on this idea. However, I would like these ideas to be exposed to other experts, right, and I would like to hear from the people. As I was telling Kevin before, there is a big group of people working on something they call EBFM, which is totally focused on predator-prey relationships.

Then there are another group of people that is totally focusing on anthropogenic impacts and how that affects the -- How that is modeled into predictions of what biomass can you catch out of a particular species, and so the good thing about that, this joint SSC meeting, is that a lot of these guys that have a different view from the view that I have would be present, and my ideas would be subjected to the critique of my colleagues, and so I would like that process to happen before I go and talk to the council. What about that, Bill?

BILL ARNOLD: I will leave that to you, J.J. I just think that you have -- I think it's a good idea for you to push your ideas forward. I think you should, and I think people will be very receptive. I also want you to keep in mind that NOAA is a very large ship, and it takes a lot of energy to make it turn even a single degree.

JUAN CRUZ-MOTTA: Right, and the other thing that we will -- Moving forward in that exercise with the SEAMAP-C data, that makes this spatially interesting enough for the region, and we have been collecting this data for thirty years, and we haven't used it, and now we come up with a way to use it. Thank you, Bill.

BILL ARNOLD: All right. Sure.

JUAN CRUZ-MOTTA: I do have more comments, but it's 4:40.

OTHER BUSINESS (234:00)

BILL ARNOLD: Okay. It is 4:40, and the only thing left on the agenda is Other Business. Do we have any other business that anybody would like to bring up?

GRACIELA GARCIA-MOLINER: If getting together for the next time counts, I need to know how many days would need, and if July -- That would be the only month that we have, or the beginning of August, and so how many days do you think you will need for the next meeting?

BILL ARNOLD: I don't think I can stand more than two days on a webinar.

GRACIELA GARCIA-MOLINER: Okay.

BILL ARNOLD: I don't know how everybody else feels. Plus, in two days, you get a lot done. I mean, we got a lot done. I

don't think we'll meeting in person in July. I do not.

GRACIELA GARCIA-MOLINER: We won't. The council won't be meeting in person, and everything is going to be virtual at least until the August meeting.

BILL ARNOLD: All right. That's just my opinion, that two days is more than enough.

GRACIELA GARCIA-MOLINER: Okay, and so I will send around asking about the dates. Then for the agenda.

BILL ARNOLD: Well, does anybody else have any thoughts on that?

MARIA LOPEZ: Bill, may I ask a question, please?

BILL ARNOLD: Sure.

MARIA LOPEZ: This is about what -- So what are you going to be presenting in the council meeting, in terms of what are you expecting the council to provide, like in terms of guidance, because that will set what you're going to be discussing in the next meeting.

BILL ARNOLD: We're going to take these two documents to them as recommendations and discuss them. I would ask them for input and guidance on the table of contents and what they want changed or added or removed, et cetera, et cetera, and then, with regard to the goals and objectives, I think that we will have to -- I assume that they would -- You know, I just can't tell you for sure exactly where they're going to go on this, Maria, but they may say we want you to go back and finish up a complete set of objectives.

They may say we're going to take these to each of the three island representatives, as they did the last time, and we're going to have them develop a list of objectives, in which case we wouldn't be doing anything.

They would be bringing it back to the council meeting, and so the bottom line is I can't predict exactly how the council is going to move on this, or act on it, and so I can't be sure how much time we're going to need, although I would say, considering we're trying to put a fishery ecosystem plan together, and that's a big job, it's hard for me to believe that we can't keep ourselves busy and have plenty of work ahead of us in a two-day meeting.

I mean, like I said, that's about all I can take of these online webinars, but I can man-up if other people want to go longer. I need to hear from you guys, and it's not my decision.

SENNAI HABTES: I am kind of with you, Bill. Past two days of a webinar can be painful.

BILL ARNOLD: Yes, and people have other jobs.

SENNAI HABTES: But, if we have like things that are necessary to get done, I would say do it. If we have clear outcomes that need to happen during the next meeting that would take longer than a two-day period, I would say we can try, but it doesn't -- It depends on what you come back with from the council. What I would say is, for now, plan for a two-day webinar meeting.

BILL ARNOLD: Okay. Anybody else?

KEVIN MCCARTHY: Bill, I think two days is my limit as well.

ALIDA ORTIZ: That's all I can take, two days.

BILL ARNOLD: Okay.

JUAN CRUZ-MOTTA: I was going to say only one, but that's okay.

GRACIELA GARCIA-MOLINER: I like that better.

BILL ARNOLD: You can do two days.

ALIDA ORTIZ: It will be twenty-four hours if you do it in one day.

GRACIELA GARCIA-MOLINER: We'll let you know. Depending on what the council requests, then we can -- Bill and I will sit down and look at how many hours you need to do that. Okay?

BILL ARNOLD: Thanks, Graciela. Any other business? Anything anybody wants to bring up, I mean that has to do with this?

ORIAN TZADIK: I would just like to say that I think that this has been a really productive two days, and I'm really surprised at everything we've gotten done, and I think there's a really nice atmosphere on this working group, and so I just wanted to put that out there for everybody.

BILL ARNOLD: Okay.

JUAN CRUZ-MOTTA: Thank you, Bill, for leading this and keeping us on track.

BILL ARNOLD: Thanks, J.J. I would just like to say that I want everybody to stay healthy and safe. That thing is still out there, and don't underestimate the power of the Corona virus, and let's all be ready to go the next time we get together.

GRACIELA GARCIA-MOLINER: Thank you to Liajay for driving so carefully throughout the meeting.

BILL ARNOLD: Yes. The hardest job of all.

LIAJAY RIVERA: Thank you all for your patience and guiding me through the document. I apologize for the delay at some points, but --

ALIDA ORTIZ: You're doing great.

BILL ARNOLD: You have nothing to apologize for.

LIAJAY RIVERA: This is also new for me, but I will be uploading these final drafts, the draft versions that we just finished, as well as the motions, and so expect them later this evening in the G-drive. If you can't access it, let me know. You have my email, and I will just write it down here in the chat.

BILL ARNOLD: Okay. Unless there are any objections, we quit.

GRACIELA GARCIA-MOLINER: We will adjourn the meeting. Say the time.

BILL ARNOLD: This meeting is adjourned at 4:48 p.m. on June 2, 2020. Thank you, everybody.

(Whereupon, the meeting adjourned on June 2, 2020.)

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