SOUTH ATLANTIC FISHERY MANAGEMENT COUNCIL

HABITAT PROTECTION AND ECOSYSTEM-BASED MANAGEMENT ADVISORY PANEL

Webinar

November 3-4, 2021

TRANSCRIPT

Habitat & EP AP Members

Cynthia Cooksey, Chair
Jeff Hartzler
David Webb
Paul Medders
Anne Deaton
Shane Staples
Paula Keener
Jeff Soss
Dr. Laurent Cherubin
Brian Hooker
Dr. Steve Ross
Dr. Rene Baumstark
Steve Miller
Sam Young
Thomas Jones
David Glenn
David Whitaker
Stacie Crowe
Laura Busch
Lisa Havel
Dr. Wilson Laney
Kevin Spanik

Council Members

Dr. Carolyn Belcher
Laurilee Thompson
Trish Murphey

Council Staff

Myra Brouer
Dr. Chip Collier
Allie Iberle
Dr. Mike Schmidtke
Suz Thomas
Cindy Chaya
Dr. Judd Curtis
Roger Pugliese

Other attendees and invited participants attached.

The Habitat Protection and Ecosystem-Based Management Advisory Panel of the South Atlantic Fishery Management Council convened via webinar on November 3, 2021, and was called to order by Chairman Cindy Cooksey.

MS. COOKSEY: My name is Cindy Cooksey, and I am the new Chair of the Habitat Protection and Ecosystem-Based Management Advisory Panel, and I wanted to welcome everyone to our fall 2021 meeting. I want to start out by thanking our outgoing chair, Anne Deaton, for all of the amazing work that she has done and how happy I am that she is still going to remain part of our AP as well, moving forward. At this point, before we get any further, I wanted to ask Roger or Myra to go over the technical aspects that we'll be using for the webinar.

MR. PUGLIESE: Okay. Good morning, everybody. This is Roger Pugliese, and I just wanted to make sure that everybody knows to use your raised hands, and we're going to be using that to be able to call on individuals to have input. We do have Myra Brouwer helping with doing that, as well we have tec h support from Allie Iberle, and so, if there's any connection issues, you can send a note directly through either the question, or chat, and those will be addressed. That's pretty the main function of how we're going to walk through and use the webinar function and system, and so, with that, I will pass it back to Cindy, and we will get started.

MS. COOKSEY: Great. Thank you, Roger. We're going to go through some business first, before we get into the meat of the meeting, and we have a jam-packed agenda that we are going to be moving forward over the next day-and-a-half, including starting out with some introductory remarks for a variety of projects, and we will be providing status updates for the climate vulnerability assessment and the ecosystem status report.

Pace Wilbur will be coming in this morning and providing us updates on essential fish habitat consultation in the Southeast, with specific emphasis on offshore wind and ports, which kind of then opens up discussions that we have regarding mapping of offshore wind areas, as well as other wind activities in the South Atlantic region, and then we will kind of finish off today focused on our EFH policy statement for beach dredging and filling, beach renourishment, and large-scale coastal engineering, which a subcommittee has been working on to revise.

Tomorrow, we are going to be focusing in on development of the habitat blueprint, with AP input, as well as the east coast climate scenario planning update, and so, before we go any further past this, I wanted to seek approval of the agenda, if there were any comments or input that folks had before we move forward.

AP MEMBER: Do you want a motion?

MS. COOKSEY: We don't have to have an official motion, but I just wanted to provide an opportunity, and I see no hands up, and so I believe that we have approved the agenda. Just quickly, while the agenda does not show any breaks, we, of course, will have some. We'll have a mid-morning break, followed by a lunchtime break, and then a mid-afternoon break as well for today, and so, next, I wanted to seek approval of our April 2021 meeting minutes. If anyone has any comments or input that they would like to provide for those minutes, you can submit them to -- Roger, who should they submit them to, if they have any comments?

MR. PUGLIESE: Just forward those directly to me, and we'll move them and get those approved.

MS. COOKSEY: Okay. Great. Do we have any hands raised regarding the approval of the April 2021 minutes?

MR. YOUNG: This is the 174-page document that I was reading last night, those minutes?

MS. COOKSEY: Possibly. I'm not sure of the exact page count, but I know it was quite extensive.

MR. YOUNG: It's 174. I got through most of it.

MS. COOKSEY: So we will consider those approved. Now one last piece of business that I wanted to cover before we turn things over to Carolyn Belcher for Committee Chair Remarks, is we have gratefully had one our panel members step forward and agree to assume the Vice Chair role, and so I am pleased to announce that Stacie Crowe, who is currently the Coastal Environmental Project Manager for the South Carolina Office of Environmental Programs, has agreed to step forward as our new Vice Chair.

For those who don't know Stacie, I have had the pleasure of working with Stacie off and on for probably close to twenty years. Prior to joining her current position as the Coastal Environmental Manager, she spent many years working within the South Carolina DNR Marine Resources Research Institute, as a benthic ecologist, as well as a benthic taxonomist. In fact, it's very timely that we have been able to get her to agree to serve in the Vice Chair role right now, because, if you've had a chance to look over the beach nourishment policy revision, you will see that Stacie is in fact the author and/or co-author of many of the papers that we cite within that policy, as she has extensive experience doing research on beach nourishment and adverse impacts associated with that, and so thank you and welcome, Stacie, as our new Vice Chair.

MS. CROWE: Thank you, Cindy. I have to say that I am grateful to be in the position, and I can't wait until we can have an in-person meeting, so I can put some names to faces.

MS. COOKSEY: Yes, absolutely. Hopefully, and my fingers are crossed, and no one can see it, but my fingers are crossed that maybe next year we'll finally get to have an in-person meeting. Now I would like to turn it over to Carolyn to provide us the Committee Chair Remarks.

DR. BELCHER: Thank you, Cindy. For those of you who don't know me, I am Carolyn Belcher, and I'm with the Georgia Department of Natural Resources Coastal Resources Division, and I am the Chief of Marine Fisheries here. I do have a long-standing history with the South Atlantic Council, and I served on the SSC for almost twenty years, as the state representative there, and was the SSC Chair for six years back in the early years of the Magnuson reauthorization.

These roles in the committees are new for me, and so I would appreciate you any feedback from you all as to how I can best serve you, back through the committee and then up to the council itself. I'm looking forward to hearing your discussions over the next day-and-a-half relative to these issues that are important for our region.

I just wanted to give you a quick update from the September meeting. There wasn't a lot on our plate for discussion, but what was there was, obviously, some pretty weighty materials, especially in the form of Coral Amendment 10. We did approve Coral Amendment 10 going forward, and we went through and accepted a revised purpose and need statement relative to that amendment before moving on and evaluating a couple of motions to forward the coral amendment.

As you can see in the report, there was a substitute motion that was offered from Andy Strelcheck that was hoping that maybe we could table action on Coral Amendment 10, with the hope that we could get a survey out there, ROV or multibeam sonar, was what they were talking about, potentially, to look at that area, to see if there was anything going on there that we needed to be aware of, with the idea of know before you go, but a lot of the discussion around the table, and some really good historical input, was presented from Ms. Laurilee Thompson from down in Florida about the fishery itself, but the council did make the decision to go ahead and approve Amendment 10 to allow for that corridor to be opened on the eastern side.

We are still going through the habitat program blueprint, as you all will be discussing that during this meeting, and so we were given that update on so far where we're at, and, obviously, Steve and I were involved in kind of working with Myra and Roger on that development, and then our final motion was basically providing you with your list of topics for this meeting.

As I said, I look forward to hearing what your conversations are for this next couple of days, and, again, anything that I can do to help this group out, moving forward, please feel free to email me, contact me by phone, whatever medium works best for you, and just let me know how I can best help you all in your role. Cindy, back to you.

MS. COOKSEY: Thank you so much. I did want to ask if the panel members had any questions for Carolyn at this point. No hands. Okay. Great. Well, before we dive into the meat of the official agenda, I did want to ask if there are any public comments at this time, and so we'll give folks a second that may be on the meeting to raise their hands, if they do. I see that Wilson has a question.

DR. LANEY: Good morning, Cindy. Thank you, Madam Chair, and congratulations on being the new chair, and congratulations to Stacie as well. I had a question for Carolyn, and the question is -- Well, a comment and a question, I guess. Carolyn, I was somewhat disappointed in the council's decision to move ahead with Coral Amendment 10, and I realize that the offer from Dr. Porch to try and get the area surveyed, so we would know before anybody goes back in there to start rock shrimping again, was not ironclad, but it sure seemed to me that it would have been prudent to wait for a year, to at least allow NMFS and NOAA and the Center to get in there and do that survey work.

He seemed fairly confident that he would be able to secure the funding to do that work, and I was wondering if you could just summarize, for the benefit of those AP members who weren't listening in, as I was, to the council meeting, the rationale behind why the council felt compelled to go ahead and approve Amendment 10 to go forward. Thank you.

DR. BELCHER: Of course, you're going to tap my memory on that. It was discussed around the table quite a bit, and there is a past history with discussions about what happened under Coral Amendment 8, but, you know, a lot of it had to do with the fact that this area had already been

trawled by the fleet and the fact that it had been going on for a time window before that was I think some of the grounding with that, but there was a lot of discussion around is there an appropriate buffer. As Wilson indicated, the conversations did go around the table, and they were brought up about some of the published papers that were out there, and folks feeling that the buffer was adequate was suggested.

The conversation basically did a lot of that back-and-to and back-and-to, but I think that folks felt more confident with the fact that the impact were probably relatively small for what we knew. The uncertainty is always going to be part of the discussion, but I think, overall, that was where a lot of the group went to.

The other thing is the unknowns of, if we hang and wait on the potential for the survey, there's not a guarantee of the survey, and it would be great if we knew that that was something that had been hardwired and written in, but the uncertainty of what's going on with budgets too, and I think that's some of the issue, and so how much longer are we going to wait on making that decision. I can recommend -- Like I said, I apologize, and I don't have the specific detail as much to my memory recall as I would like to, but the meeting minutes are pretty comprehensive in that, and I do feel that we had good conversations about it, and I do understand the disappointment with us going forward with it.

DR. LANEY: A follow-up, if I may, Madam Chair?

MS. COOKSEY: Yes. We should have time for just one or two more questions before we need to move on.

DR. LANEY: Okay, and so I agree with you, or I certainly understand, Carolyn, I think, and I agree with you that the conversation was rather interesting. In particular, Laurilee's comment to the effect that, well, if a survey shows that there is any coral in there, it's only because there hasn't been any rock shrimping in there for seven or eight years, or however long it had been closed, and my response to that, as I was listening, was, well, yes, and that was the whole point, I think, in closing that area in the first place, and so I was rather dumbfounded when Laurilee made that comment, because that was exactly the point in the first place in closing that area, was to provide a buffer adjacent to the coral areas, and so, again, I am disappointed that, even though the funding wasn't exactly solid, that the council chose to move ahead with that. Thank you.

DR. BELCHER: The other thing is I know that Laurilee did offer, and, of course, Clay also brought up the fact that we do have the ability to put observers on those boats, so that we could have that potential feedback while they're out and actively fishing, to see if there is any potential interactions, and the discussion also came up about the potential of the use of some sort of emergency action to close the area, if it's found that it is in fact impacting some oculina, and so I think that there are some discussions there that at least the council is interested in making sure that, if there's a potential for us to pull the trigger to close it again, because of impacts, that we can do that.

MS. COOKSEY: Thank you. It looks like we have hand up from Sam Young.

MR. YOUNG: Thank you. This has made the local paper, because it's fairly close to Stewart, and there were oculina trees, if you will, thirty feet high, and I don't know how long it takes for

that coral to grow to that kind of extent, but, to me, I was certainly opposed to opening that, personally, and it sounds like it's a done deal, and is there any way for the council to revisit that decision? Are we empowered to do that, or is it just -- Are we spinning our wheels, and it is what it is, and they're going to go forward with it?

The only other comment that I wanted to make overall, after I read most of the 174 pages from the last minutes, is I am all about the science, and I'm a charter captain, and I'm all about the reporting. I'm all over that, but the science isn't exactly the science when you're using algorithms, and algorithms can lead to flawed data, based on the assumptions that are raised, or put into, the algorithms.

Case in point is red snapper, and thank you, Dr. Crabtree. I noticed, in the algorithms that were done when I was in MREP, and this goes back to maybe ten year ago, and we were looking at data points where they had monitoring that never went south of Tampa, and a number of us from southwest Florida kept saying, folks, we have a ton of them here, and, low and behold, this last year or whatever, Clay Porch, and I have a lot of respect for Clay Porch, and it was miscalculated by 300 percent, and so it was opened to south Florida, or southwest Florida, for forty-one days to the recreational and charter, and so, when people say the science is the science, I am taking that tongue-in-cheek, because I have seen where the science has not actually been, in my mind, complete, when you're throwing in suppositions based on algorithms and a lack of data and monitoring sites below a certain point.

It's a wild-ass guess, I guess, I would have to say, in some cases, and so -- But, yes, I am a huge believer in science. I mean, I ran on that, when I won a city council seat in Marco Island on water quality, and so those reports are interesting, and the other part I would mention is that, when we talked about the science, it was interesting that, when we migrated from Collier County pollution control, who had been doing all of our testing and providing reports, and we switched to another lab, using the same methodologies and maybe it's not -- The protocols are all the same, and the data was totally different.

That raises a few questions, for me, when it comes to science, and that delta between the two laboratories has yet to be explained, and so I would proceed with caution, is what I would say, as it relates to that component, and so that's all I have to say. Thank you.

MS. COOKSEY: Thank you, Sam. Paula, did you want to jump in, and then that will be the last question that we have for this topic.

MS. KEENER: Yes, and thank you very much. Just, for the record, I agree with Wilson and Sam. I also was very surprised to see that the council voted to pass that amendment, particularly based on the discussion that was held at the council meeting, which I also listened in on, and so thank you.

MS. COOKSEY: Okay. Thank you, guys, so much, and thank you, Carolyn, for that update. Now we have the Status of Amendments Under Development with Roger.

MR. PUGLIESE: Okay. Thank you. One quick thing I would like to note is that Trish Murphey is now -- One of our former AP members is actually now a council member, and so we will be back-filling that position, but congratulations to Trish, and she's with us today. With that, I would

like to also reemphasize the fact that the overall operations of the advisory panel is usually by consensus, and so we usually do not move forward with motions, and so just for kind of clarification of how this whole group usually operates.

With that, let me just jump into -- I am just going to give a very brief update, because there is a lot of amendments moving forward in the system under the different plans that are in place, and the most that are operating at this point is under the Snapper Grouper FMP. We have Amendment 48, where a wreckfish ITQ program modernization program is being addressed, moving away from what they have essentially as paper-coupon-based systems and looking at electronic program modifications of fishing seasons and spawning closures and permit allocations and some potential vessel monitoring.

Work is ongoing on the amendment, and it really is extended out some, and so there is probably going to be coordination during the winter of 2022 and meeting of the wreckfish shareholders, following that, and the council will address this as material continues to develop.

A number of the next amendments that are under development are really in response to the multiple stock assessments that have occurred over the last couple of years, and so the first is Amendment 50 in the red porgy rebuilding allocation, and the amendment is considering that the stock is both overfished and overfishing is occurring, and this will have to establish a rebuilding plan. Under the congressional mandate, that has to occur by June 12 of 2022. That will provide revised allowable catch limits, sector allocations, and accountability measures. A public hearing was held on September 15, and in December of 2021, the council will review and modify and approve all actions.

There is an Amendment 49, which is for greater amberjack, and, again, it responds to the latest assessment and establishment of ABC. Scoping hearings were held in April of this year, and the Snapper Grouper AP provided input and recommendations, and, in September, the council reviewed those scoping comments and the preliminary analysis, and so that continues to move forward.

Amendment 44 is for yellowtail snapper, and that is also addressing revising the allowable catch ABCs that have been provided in the latest assessment, and it will look at adopting those and providing sector allocations. In September of 2021, the council will review a preliminary analysis and approve that for scoping, also.

Amendment 51, again, is addressing a new stock assessment specifically for snowy grouper, and the assessment indicates that the stock is both overfished and undergoing overfishing, and this assessment, as a number of the other ones, really does incorporate the new information from the MRIP program, the Marine Recreational Information Program, and the FES methodology, and so the new recreational information has been integrated into all of these different systems. The council reviewed an options paper and directed staff to gather input, and, at the December meeting, they will potentially approve it for scoping.

That brings us to Amendment 52, which is for golden tilefish, and, again, a new stock assessment was provided in 2022, and the stock is neither overfished nor overfishing is occurring, and so the council will be considering looking at an options paper and approving that amendment for scoping at the December council meeting.

The last amendment under development for snapper grouper is for gag, and, under the new gag stock assessment, the stock is both overfished and undergoing overfishing, and this amendment will provide actions to establish a rebuilding timeframe, and, in December, the council will review the advisory panel feedback and options paper and again consider approving for scoping, and so a lot of activity under snapper grouper, mainly addressing multiple stock assessments that have been prepared.

Under dolphin wahoo, Dolphin Wahoo 10, which revises the allowable catch limits, sector allocations, accountability measures, and it addresses retention of dolphin and wahoo in a number of different gears, as well as removing the operator card and reducing the vessel limits for dolphin, from sixty to fifty-four fish. That amendment was approved by the council and has been submitted to National Marine Fisheries Service.

Under Coral Amendment 10, you have reviewed that activity and status, and it will be submitted to the Secretary of Commerce. Under mackerel and cobia, we have Amendment 4, which gets to the Atlantic king mackerel, which also were determined to be neither be overfished nor overfishing occurring, and so there will be updated catch levels based on the recent SSC recommendations and modifications, and, in September, the council approved the amendment for public hearings.

The last is more of a generic amendment, and it addresses the comprehensive ABC, allowable biological catch, control rule amendment, and this has been in development for a long time. However, it still is going to be extended. In September, the council provided additional guidance, and, really, we're probably going to be looking at modifications until the June of 2022 meeting, and that is just a snapshot. All of these different things are moving, and detailed information is under the section of the website that addresses any of these and all of the associated documents, and they will be also integrated into the different -- As I said, the December council meeting, et cetera, as they continue to develop, and that is pretty much the quick overview of what is moving forward under amendments. I will pass it back to you, Cindy.

MS. COOKSEY: Great. Thank you, Roger. Super busy. We've got a lot going on, is what I'm hearing. We're going to go ahead and move on to Item Number 2 on the agenda, which is the Status of the South Atlantic Climate Vulnerability Assessment and the South Atlantic Ecosystem Status Report.

My update is going to be very brief, in that we have material within the briefing book that shows the presentations that were provided to the council in September, which are open for all of the AP panel to review. We are also still waiting on the final reports, and so, for the Ecosystem Status Report, the draft has been finalized, and they are waiting on a final review before they can release it, and we are expecting it any day, basically.

The Climate Vulnerability Analysis, the draft is also under review, and so we are expecting that soon. When those documents become available, we plan on ensuring that we distribute them to the panel at that time, and I would open it up, if there are any questions from the panel members at this time.

MR. PUGLIESE: Cindy, let me jump in real quick, because this is continually evolving, because we had -- Literally yesterday, we were provided a draft that is still in its final, final, final review,

but it was provided, and it is loaded to the site under 2c, and so we do actually, I believe, have the first iteration of a final draft for the Ecosystem Status Report. That was one of the main reasons that we wanted this as a topic here, to try to provide that, and then a lot is going to happen, as we move into the future, on where this goes, as it gets finalized, and then implemented, and the AP will definitely have more opportunity to have discussions as you move from a report into how this actually can be reviewed, or used, and applied in our region.

MS. COOKSEY: Thank you, Roger. I see we have a question from Paula.

MS. KEENER: Thank you very much, and so I want to go back to Roger's updates on the amendments, and thank you for that, Roger, and can you tell us what the timeline is for moving forward with Amendment 10, please?

MR. PUGLIESE: On Coral Amendment 10, it will be submitted within a month, or less, and so it's finalized and moving forward.

MS. KEENER: Thank you.

MS. COOKSEY: Thank you for that question, Paula. We've got Sam up.

MR. YOUNG: A quick question. Are we -- Is this panel limited to federal waters, or are we talking about ecosystems and habitats that are really the estuaries in state waters, because that's kind of, for me, where the rubber meets the road in habitat, are the estuaries, and I don't know if that's under the purview of FWC, or do we have reach from not just federal waters, but all the way to the source, up against the coastline?

MS. COOKSEY: We have got designated essential fish habitats that extend into the estuaries, into the tidal freshwater habitats, and our panel discusses issues going in even further for our anadromous species as well, including fish passage, at times, and so we're interested in everything to do with the entire life cycle of our federally-managed species and the habitats that they occupy, and I didn't know if Roger wanted to expand upon that.

MR. PUGLIESE: Yes, and thank you, Cindy. Sam, that's a good question, and, for orientation for many of the members, the council does have a congressional mandate to look at the broadest sense of habitat and, essentially, under their designation of essential fish habitat, has taken it to heart, about those connections, and many of the not only habitats, the essential fish habitats, but the designations as areas of particular concern extend into estuarine habitats, because of the critical function in our region, and some of the most critical functions are provided by that connectivity.

As an extension of that, many of the policy statements address the broader scope and address issues that are not just tied to federal waters, but are tied to not only state, but inshore areas, because of the importance of how the system and the species managed by the council are dependent on those different habitats, and so the long answer to a short question is, yes, and the members are really the individuals in the field that have that direct connection to a lot of the habitats beyond the federal waters and reaching into those areas, and so it is absolutely right on target to be able to provide input and guidance. As I mentioned, a lot of those policies that have been developed over time directly address some of those types of either habitats or activities impacting those habitats.

MR. YOUNG: Thank you, and that's great to know, because I was limited to just federal waters, when there is all kinds of opportunities in state waters, which is nine miles on the west coast and three here, and so to know that -- That gives me a lot more hope.

MS. COOKSEY: Thank you, Sam, and I think another highlight of the way that this panel looks at federal and state waters is the heavy involvement that we have from our state participants. Our outgoing chair, Anne, and our new incoming chair, Stacie, and our previous chair before Anne, Pat, all representing state agencies, and so that is something that is a super important part of this panel. I wanted to recognize Myra.

MS. BROUWER: Thank you, Cindy. I just wanted to get back to Paula, and somebody else had a question earlier about where Coral Amendment 10 is and whether there will be any more opportunity for public comment, and there will be. The council will be submitting the amendment in about a month, as Roger said, to the National Marine Fisheries Service, but, after that, there will be a couple more opportunities for the public to comment on the amendment, once it begins its rulemaking process through the National Marine Fisheries agency, and so I just wanted to make sure that was -- That members were aware that there is still opportunity to provide your comment. Thank you.

MS. KEENER: Thank you very much.

MS. COOKSEY: Thank you, Myra. I don't see any other hands raised, and so that means we are ready to move on to our NOAA Fisheries Habitat Conservation Division EFH Consultation Update provided by Pace Wilbur with the NOAA Fisheries Southeast Regional Office.

MR. WILBUR: Roger and Cindy asked for a short overview of the status of our EFH consultation program in the South Atlantic and the Caribbean, and so that's what we've put together, and I will apologize, kind of upfront, and there's going to be a lot of maps and data in this that are really meant to convey some in-depth information that I really won't have time to go through today, but, if anyone has questions about that more in-depth information in the slides that are in the briefing book, I would be happy to talk with you at any time.

The South Atlantic and Caribbean Branch inside the Southeast Regional Office has eleven people distributed from Beaufort, North Carolina out to St. Croix in the U.S. Virgin Islands. The folks who are currently in the branch are listed here, based on the field office of location, and a couple of things to note is that we do play a major role in the NOAA Coral Reef Conservation Program, and so we have some staff, indicated by the CRCP acronym, who spend 100 percent of their time doing NOAA Coral Reef Conservation Program work, and we also have three staff who have the great majority of their time funded through the hydropower program at NOAA, and so they spend their time working with FERC, or the Federal Energy Regulatory Commission, on hydropower projects.

This is the one slide I am going to show you that's not about EFH, and that's to make the point that the three staff in our branch who work on FERC activities actually are responsible for FERC projects throughout the southeastern U.S., and so that's from Texas to North Carolina, and we even have a FERC project in Puerto Rico, and so those two folks -- Two of those three folks are located in Beaufort, and so, even though they are in Beaufort, North Carolina, the great majority of their time is spent dealing with our hydropower portfolio.

Inside our region, we get anywhere from about 650 to 1,000 consultation requests a year for various activities that may disturb wetlands or waters of the U.S. or federal waters or essential fish habitat, and so what I'm going to do today is talk about how we triage that 650 to 1,000 projects down into a manageable number that the folks in our branch can handle, given a reasonable workload.

The three mandates that we have are the Federal Power Act, the Fish and Wildlife Coordination Act, and the Magnuson-Stevens Act, and this slide uses South Carolina to show how those three mandates kind of relate to each other, and so, under the Fish and Wildlife Coordination Act, we can comment on any activity from the mountains to the EEZ that may adversely affect waters of the United States.

Also, under the Federal Power Act, we focus on a subset of waters of the United States that actually are the corridors used by diadromous species as they migrate to and from the ocean to spawn in our nursery habitats, and particularly when those migrations are impacted by dams or other structures licensed by the Federal Energy Regulatory Commission.

Now, the Fish and Wildlife Coordination Act and the Federal Power Act are pretty much how the Fisheries Service viewed its habitat program until the mid-1990s, when the Magnuson-Stevens Act was reauthorized to include the essential fish habitat mandates, and the essential fish habitat mandates that came in by the Magnuson Act did not add to or subtract from the responsibilities we had from the Fish and Wildlife Coordination Act and the Federal Power Act.

What it did was it provided a focusing tool, and it told us what part of this vast landscape we should really be focusing on in order to enhance federally-managed fishery resources, and that's really what the Magnuson-Stevens Act, and it does that through a process with the council's designated essential fish habitat, and then we and other federal agencies are charged with conserving the essential fish habitat that the councils have designated.

These are some basic maps that show how that 650 to 1,000 consultations a year are kind of distributed, and I know it's a little small, but you can see the basic patterns that we want to see, in that most of the consultation requests we get are for activities that are occurring somewhere on the coast, and so you look at all those dots, particularly in the cumulative map from 2014 to 2020, and you see the coastline very clearly kind of outlined, and it gets much more sparse as you go inland, and it also gets much more sparse as you go out into the ocean. We receive very few consultation requests for activities that are out in federal waters, and, I mean, it's literally less than a handful a year.

One of the things that you could maybe see in this slide, and I'm sorry that I didn't put a circle in here to kind of make it easier to stand out, but one thing that you can see, in the 2014 to 2020 map, is that many of the clusters of the projects that we actually reviewed that are inland tend to occur along rivers that have diadromous fish runs, and so you can see that cluster of green that's almost right in the middle of the slide there, in the 2014 to 2020 panel, and that's the Savannah River, and that's all the activities up near the Augusta Shoals, and that's an activity where -- If we kind of zoomed-in, and I had the foresight to put a red circle there, you would see that we actually do a lot of Fish and Wildlife Coordination Act work around the City of Augusta, because of its high anadromous fish runs that are there.

Similarly, you can see another cluster of Fish and Wildlife Coordination Act work around the City of Columbia in South Carolina, because of the confluence of the Saluda and the Broad River and the Oconee River and all those areas have importance to anadromous fish runs. Then, when we go up into North Carolina, you can see the dams on the Cape Fear River that constitute the initial barriers on that river to anadromous fish runs and all the work we've done with the Corps of Engineers and the state there to provide fish passage at those locations.

That roughly would illustrate how we kind of use the Federal Power Act and the essential fish habitat provisions of the Magnuson Act to prioritize all of our consultation requests into one of the subsets that we work on.

Another way to do that prioritization is to focus on the actual EFH designations themselves, and it's not really widely discussed, but, if you get into the EFH rule, it talks about four levels of information that are used to designate essential fish habitat, and the lowest level, Level 1, is simply the presence or absence of fish. Level 2 is the fish are concentrating in a particular environment, and Level 3 is the fish are shown to have superior rates or growth, survival, or reproduction in a particular environment, and Level 4 talks about actual recruitment from the habitat into the fishery.

Intuitively, those areas kind of represent, or those levels represent, different geographic extents, and so presence and absence would be a big broad area, and areas where the fish concentrate is a slightly narrow area, and then where they have superior rates of growth, survival, and reproduction is kind of an even smaller area than that, and so we kind of normally indicate this through a triangle kind of diagram, like we've shown here.

When we do our triage, to identify the projects that we really have time to work on, we usually typically focus on Level 4 and Level 3, because we just don't have the human resources to focus on Level 1 and Level 2 EFH designations, and we can also argue too how much of a bang of a buck we would get from focusing on those lower levels.

Another way to kind of triage the workload is by acres, or a cumulative impact, or I'm sorry, but just triaged by acres, and what this slide does is it takes from a typical year, which happens to be 2014, and it sort of made a list of the acres for every one of the 875 consultation requests that we received in that year and then kind of ordered them from the smallest to the largest, in terms of acres, and then kind of added all those numbers, to kind of get to a cumulative number. What you can see here is that we have a lot of really, really small projects.

If you actually kind of tweak the numbers a little bit, you can see that it's really the top 10 percent, or 10 percent of our projects, constitute 94 percent of the acres that we are asked to kind of consult on each year, and those projects are typically beach nourishment projects, port expansions, highways, and large commercial or residential developments.

The other interesting thing from this exercise that was kind of eye-opening to me was the actual number of acres that we're asked to consult on each year. 26,000 acres in a single year were the subject of various EFH consultations that we were asked to do, and it's just a mind-boggling number, and we often now -- We have been doing these kind of stats for several years, and we see numbers as high as 45,000 acres in a single year, and it's really quite amazing how much activity is out there in the world of EFH.

Now we're going to go through a few slides to kind of see how this triage process kind of works, and then I am going to kind of pause on some of these slides, to talk about what will be the priority activities for us in the coming year, and so this is the focus on our Beaufort, North Carolina office, and this is 2014, and I will kind of get you just sort of quickly oriented to the slide, because we're going to use this format for the next several slides.

The blue bars are the EFH, or the projects that are projects that are proposed in tidal waters, and the red bars are the Fish and Wildlife Coordination Act projects, or the projects that are proposed to impact non-tidal waters, and so there's a couple of questions that we want to kind of ask here, and the first thing is are we successfully focusing on the EFH projects, and the simplest way to look at it is on the panel on the left side, where it has no staff, and the red bar there should always be higher than the blue bar, because we have chosen to not review, or no staff, the Fish and Wildlife Coordination Act projects, but we are trying to minimize the number of projects that we don't review that involve EFH.

In this particular case, you can see the red bar is higher than the blue bar, under that no staff section of the left panel, and so we have achieved our goal there. The next thing to look at is, well, how many projects are really getting deep-dive kind of look and resulting in recommendations, and that's going to be the left-most part of the right panel, and you can see here that, for Beaufort, that, while we were able to do in-depth reviews of projects in 2014, and then, if you just quickly glance over to the right-most panel, you can see those twenty projects represented nearly 4,000 acres of habitat, and so we were able to pick from the projects we did review, we were able to focus on the ones that have the most impact, in terms of acres, and our triage process basically worked there.

Just a couple of notes about what was going on in Beaufort in 2014, and this basic pattern comes from a small number of projects having a very large acreage attached to them, and those were beach nourishment projects and N.C. Highway 12.

This is sort of where we are in FY21, and, again, you can see, looking on the left panel, that the red bar is higher than the blue bar, under no staffing, and so, yes, we are focusing on the EFH projects. The next thing is to look at the number of projects receiving recommendations. Well, it's about half of what it was in the 2014, and we went from twenty down to nine projects, and we're still able to cover a large number of acres, glancing over to the right side, for those nine projects, but the number of projects that we are able to review in Beaufort has gone down, and that's because we have lost -- If you remember back to the original slide, there was a vacancy listed in Beaufort, and, even though we have two people in Beaufort, they mostly focus on hydropower work, and so that's why we've seen sort of a drop in the accomplishment level in Beaufort.

Looking forward to what will be the priorities in FY22 for Beaufort, NC Highway 12 has kind of dropped off the list for us, and we continue to focus on beach nourishment, and we continue to focus on inlets, like Jay Bird Shoals and Hatteras Inlet and Frying Pan Shoal. The big wildcard in FY22 is going to be the Kitty Hawk Offshore Wind Project and the Wilmington East Wind Energy Area. As most of you probably know, the Kitty Hawk Project is already well into the NEPA process, and it's supposed to have its draft EIS available about ten months from now, and the Kitty Hawk Offshore Wind Project, by itself, is proposing over 22,000 acres of impact from the cables and export cables for that project.

We'll quickly look at the Charleston office, and this is going back to 2014, and the Charleston office is responsible for both South Carolina and Georgia, and so we're going to look just at the South Carolina side of the Charleston office, and, again, if we look at that no staff section of the left panel, you will see that the blue bar is higher than the red bar, and so, back in 2014, we weren't doing as good of a job as we wanted to to focus on the EFH projects, and we were kind of a little bit all over the place back in 2014.

We were still able to provide in-depth reviews of about twenty-one projects in South Carolina, and those represented over 1,500 acres, and so we were kind of meeting our acreage kind of task for the triage process, but we really could have done a better job on trying to avoid having the no staff on a larger number of projects in South Carolina, and so you will see that we actually are doing a much better job in 2021. The red bar now is much higher than the blue bar, indicating that we're very rarely having to no staff EFH projects in South Carolina.

The recs bar in the left panel is down. Again, it's down about more than 50 percent compared to where it was in 2014, but it still represents a substantial amount of acres, over 4,000 acres of project, and so this, again, comes from beach nourishment projects really being a big part of what sways the acreage story in South Carolina. Our FY22 focus is going to be on the Charleston peninsula coastal storm reduction project, and we're also going to be finishing up the Mark Clark Expressway and doing some other work related to the Mark Clark Expressway off of I-26, but those will largely be our focus for next year.

The Georgia projects are pretty much the same in 2014 and 2021. We were able to do a good job in focusing on the EFH stuff, and very few projects get actual recommendations, and those projects that get recommendations still don't really represent a large number of acres, because the thing that's unique about Georgia is, while we get a fair number of consultation requests, they tend to be for very small projects. It's very rare to see a large project in Georgia, and so you don't see a big acreage signal for there.

It's pretty much the same story in 2021 as we saw in 2014, and the real focus of our work in 2022 for Georgia is going to be implementing mitigation that's tied to SHEP and to dissolving all the controversial issues about fish passage at the Savannah Bluff Lock and Dam.

St. Augustine, this is northeast Florida, and we were doing a pretty good job in 2014 of focusing on the EFH work and getting ten in-depth reviews that focused on over a thousand acres of EFH, but, by 2021, things have kind of tipped. We lost our staff person in Northeast Florida, and we have not been able to replace that position, and so the number of no staff letters in northeast Florida has gone up considerably, and the number of recommendations, of projects getting recommendations, has gone down considerably, and that's not anything that is likely to change in the next year.

West Palm Beach, in southeast Florida, this is where the great majority of our consultations were occurring back in 2014, and you can see, looking at the no-staff part of the left panel, that we were doing a good job making sure that we got to the EFH work, and almost seventy projects got in-depth reviews, but those in-depth reviews only covered about 1,500 acres, and so, again, in southeast Florida, we tend to have more smaller projects than we see elsewhere within our region, but still it's a decent number of acres to be doing nearly seventy EFH consultations on.

Things have changed considerably in 2021, and the no staff part of the left panel has now gone through the roof with the blue bar, and we're very seldom getting an opportunity to review projects in southeast Florida, and you can look at the recommendation bar too in the left panel and see that it's gone from something that was approaching seventy to something that's now closer to around sixteen or seventeen, and so very few projects are getting in-depth reviews.

That is because the large ports in southeast Florida are kind of -- The Port of Miami and Port Everglades, in particular, are taking substantial amounts of staff time for us to participate with the Army Corps of Engineers on the active management monitoring of those projects, as well as planning mitigation for those projects, and this is a trend that's going to continue into FY22 and probably for several years beyond, and I just don't see our consultation recommendations getting back up to where they were in 2014 without a large infusion of additional staff.

This is just two slides on the Caribbean, real quick, and very few projects in the Caribbean is really kind of the message there. We do a good job in covering almost all of them, but there's just not a huge number of projects, and the projects that are really the ones that we work on the most in the Caribbean are large civil works projects that are part of disaster recovery initiatives that Congress funded, and the other unique thing about our Caribbean work is that we work very closely with our Protected Resources Division, and we're able to integrate the EFH and the ESA work much more tightly in the Caribbean than we do elsewhere. This is my question slide, and so I'm happy to answer any questions that folks have.

MS. COOKSEY: Thank you so much, Pace, and I wanted to let the panel members know that we only have Pace for a limited amount of time, and so please go ahead and get questions up, or any discussion that you want to engage in, and it looks like the first one up is Paula.

MS. KEENER: Thank you. Pace, thank you so much for the presentation, and it's great to hear your voice again, and it's been a long time. My question is if you have seen any trends in the types of projects over the years. For example, you've mentioned that beach renourishment is a big one, but have you seen changes in large-scale development, port expansion, or highways over the years? Thank you.

MR. WILBUR: We do see trends in the appearance and disappearance of those projects, and so like you'll go through a period of two or three years where they were very common, and they dominate the portfolio, and then they disappear for a few years after that. Those trends -- I am an armchair economist, and so I kind of always attribute them to broader economic events, and we've had a near complete disappearance of large residential development projects in northeast Florida in the last few years now. Whether that's an economic event or reflects the assumption of 404 waters by the State of Florida, and so it's kind of taken out of the federal side of permitting and now is exclusively in the state side of permitting, I am not really sure.

Looking more towards coastal projects, the huge infusion of disaster recovery dollars from the 2017 and 2018 emergency supplemental bills, those are now leading to lots of coastal storm protection projects that are now kind of coming through our system, and so there's been a huge increase in those.

MS. KEENER: Thank you.

MS. COOKSEY: Okay. Laurilee.

MS. THOMPSON: That was a great presentation, and I was entranced looking at the charts last night and going through them. I am new to this, Pace, and so, if this is a stupid question, I apologize, but so you get these projects in, and they are reviewed by NOAA, and do you make recommendations on how to make the projects have less impact on EFH, and, if you don't have enough staff, and you don't review the projects, do the projects then go forward anyway without any input from NOAA? How does this all work? Thank you.

MR. WILBUR: Sure, and so we receive consultation requests, and our job is to make recommendations to minimize the impacts to essential fish habitat or to just general wetlands, if it's a Fish and Wildlife Coordination Act project, and those recommendations are usually made to the Army Corps of Engineers, because they're the permitting agency, although there are situations where the Coast Guard or some other federal agency is the permitting lead.

Those agencies are free to accept or reject our conservation recommendations, and there's a process that they have to go through if they're going to reject them, but it is a process that they can go through, and we do have a couple of sort of emergency buttons we can hit. Like, if we really don't like what's going on, there's an elevation process that goes up to the Secretary of Defense and Secretary of Commerce, or another elevation process that goes to the President's Council on Environmental Quality, for projects that we really, really feel are going in the wrong direction and are not getting the cooperative response from the lead federal agency, and so we can -- It's generally an advisory process, but we do have those ways to kind of go up to the top if we need to.

As far as the latter part of your question, yes. If the Army Corps or the Coast Guard or the Navy are consulting with us, and we don't have staff to provide any recommendations, then that project moves forward as best the Coast Guard or Army Corps or Navy can handle them on their own, and they go forward without the benefit of our recommendations.

MS. THOMPSON: Thank you.

MS. COOKSEY: Go ahead, Anne.

MS. DEATON: Thank you, Cindy. I was just going to add on to that, to what Pace said, and, fortunately, there is many agencies that comment on these projects, depending on where they are and the authority of the agencies, but I think there's about ten state agencies that will be commenting, and so, if NMFS doesn't get to it, there's a chance that like the state marine fisheries will comment, or the wildlife resource commission staff would comment, and, when we see something that we feel is very controversial or likely to get pushed back, we do work together and reach out to each other, because, when we get more than one agency to respond with similar concerns, it really strengthens the argument and carries more weight, and so we sort of have, I guess, an interagency triage process built in as well.

MR. WILBUR: That's an excellent point. We're all in this together, and we get a lot of support from the state, and we hope that the state views us as pretty supportive of their recommendations, too.

MS. COOKSEY: Thank you, Pace. Just for those of you on the panel who might not be aware, when Pace was referring to the consultations for the Charleston and Georgia offices, that's me. I'm the one in there that is working on all of those projects, and I joined Pace's branch back in 2016, and so I am very familiar with the process and the numbers, and so, today through tomorrow, if there are additional questions, I will be around and can help address them, but, right now, it looks like we have a question from Sam.

MR. YOUNG: Pardon me, and I haven't been privy to this whole preamble that leads up to the slide that we're looking at, but I'm just curious, in terms of the data gathering, and is -- The source data, do you believe it's valid? Is it based on algorithms, or is it based on anecdotal evidence from charter fishermen, like I was, and I am just trying to get to the validity of the data from which we're going to vote on.

MR. WILBUR: The data that I presented today are data that we developed in-house based upon the consultation request we received, and we glean information off of those to create a database, and I personally have built this database for more than ten years, and I've gone through a lot of QA/QC on it, and so I feel the data could pass anyone's test for completeness and accuracy.

There are publicly-available versions of these data, through the Army Corps of Engineers and through a NOAA website called ECO, Environmental Consultation Organization, and those data I have less of a handle -- I mean, I have less experience with those data, and so I can't really attest to how thorough or complete they are, but the data that I have compiled I feel is pretty accurate, and I have shared parts of these data with Roger, and Roger and I are kind of talking about ways to share even more of it, and so hopefully there will be more access to these numbers by anybody, but anybody in particular that wants them, I am happy to share them.

MR. YOUNG: So is it primarily based on algorithms, I guess is my question.

MR. WILBUR: No, there is no algorithms. It's somebody reading it and making a decision about what to do.

MR. YOUNG: Thank you.

MS. COOKSEY: Thank you for those questions, Sam. Do we have anybody else before we let Pace go? Well, thank you so much, Pace. I appreciate that. Now, I am going to ask that we keep up Pace's presentation, because I'm going to expand upon it a little bit when we start talking about saltwater mitigation banking, and can we go back to Slide Number 6 on Pace's presentation?

MR. WILBUR: Thanks, Cindy. I've got to go.

MS. COOKSEY: Okay. Thanks, Pace. Next on the agenda was a discussion of saltwater mitigation banking, and this was a great example of I thought I was going to jump on and give a five-minute update, because, of course, everyone is already familiar with saltwater mitigation banking, and what I realized, in the planning leading up to this meeting, and in conversations with Anne and Roger, is that is not an assumption that I should be making, and so I do want to kind of give a little bit of a background about what I'm talking about when I talk about saltwater mitigation.

As I mentioned, I work under the Habitat Conservation Division with Pace, and I am the one -- I am the biologist who is conducting the consultations on essential fish habitat in Georgia and South Carolina, as well as doing some of the consultations throughout the rest of the region, from the Caribbean up to North Carolina.

Under the Magnuson-Stevens Act, we are directed for the conservation and enhancement of EFH, to avoid, minimize, and offset adverse impacts, where an adverse effect is any impact which reduces quality and/or the quantity of EFH, with our agency's goal of no net loss. As you could hopefully glean from Pace's presentation, this can be a challenge when we're talking about tens of thousands of acres that are routinely under an adverse effect possibility, and so you kind of saw the process under which we decide which projects that we are going to consult on, and that's usually where we try to get the most bang for our buck, because we are severely short on staff to address these projects.

The avoid and minimize, that is obviously where we are in discussions with have all the possible alternatives been fully evaluated and what can we do, and what are any modifications that we can do to avoid any type of impact, and we then move on to our minimization efforts, and this is where we bring in a lot of our best management practices. When it's determined that we can't avoid the project or alter the project in any way, then what other steps can we utilize?

That minimize the best management practice approach is something that we'll come back later today, when we're going over the beach nourishment policy, because that was something that I was trying to bring into the policy, is this minimization effort. When we can't avoid it, how can we minimize it? Then this is sequential on purpose. This is the order in which we are supposed to go about this process when we are in conversations with applicants and federal agencies that are engaging in actions.

Then we seek to offset, and what the heck does "offset" mean? Well, this is where compensatory mitigation comes into play, and, within the federal sphere, there is a lot of ways that mitigation plays out. Different legislation talked about mitigation and offsetting of adverse impacts, and so, in this case, we're working under the Magnuson-Stevens and looking at offsetting adverse impacts, but we also have the Clean Water Act, which is a big player in the requirement for compensatory mitigation for adverse impacts to aquatic resources.

Back in 2008, there was what's called the 2008 Final Mitigation Rule that was set up between the Army Corps of Engineers and EPA, where the primary point of the legislation, or the rule, was to ensure that there was a standard of practice for offsetting compensatory mitigation of these adverse impacts under the Clean Water Act. Now, NOAA has also signed on to that rule, and that is the primary tool that we use in our consultations for offsetting our adverse impacts.

The thing to keep in mind though is that kind of history of the Clean Water Act for the majority of compensatory mitigation, and so that means we're also addressing freshwater impacts and stream impacts and riverine impacts, as well as our tidal freshwater and our tidal saltwater impacts, all under this umbrella of the compensatory mitigation final rule, and so I guess the best way to kind of think about this is, under the mitigation rule, we try to make sure that we have in-kind mitigation for adverse impacts, and so, if someone is in a freshwater stream, and they want to fill the stream to create a road crossing, then, if they have done all they can to avoid and minimize those impacts, and they can no longer avoid and minimize any further, and they are going to have an unavoidable

adverse impact, then, during the permitting process that they do with the U.S. Army Corps of Engineers, they would be required to complete compensatory mitigation.

Now, prior to the rule, people were often allowed to do what's called permittee responsible mitigation, and PRM is the acronym you will often hear people use, and that is where the individual, the applicant, business, whatever the individual is, was the one who conducted the mitigation. They would come up with a plan, and they would present the plan, and the plan would be approved, and they would conduct the plan.

Well, there was a lot of problems that occurred with permittee responsible mitigation, and there were a lot of failures associated with it, and so the decision was to create a three-tiered list of mitigation that folks should turn to, and the first one is mitigation banking, then in-lieu fee, and then permittee responsible mitigation. The mitigation banking is a for-profit business, in that you have individual entities that develop mitigation banks that are more frequently associated with a project where they are trying to restore some sort of lost ecosystem functioning. That restoration of the functioning generates mitigation credits that they sell on the open market to people that are then conducting projects that are creating impacts.

In-lieu fee programs are non-governmental agencies, governmental agencies, such as the state level and the local level, but they are not individuals. It's some sort of recognized entity that sets up a program where fees are collected by the people that are conducting adverse impacts, and then this in-lieu fee program carries out activities that involve restoration or creation or preservation to offset those impacts, and there is really not -- I know that Florida has an in-lieu fee program, and I think one of the best examples of an in-lieu fee program is in the New England area, where they use in the in-lieu fee program to collect fees from applicants that are adversely affecting stream crossings, and they use those fees to improve fish passage throughout the New England area, and so they have a very successful in-lieu fee program up there. Then, lastly, you have the old-fashioned permittee responsible mitigation.

Within -- I am most familiar with South Carolina and Georgia, and, within those states, we have lots of freshwater mitigation banks that applicants can go to to purchase compensatory mitigation credits from, and there has historically been very, very few, if any, saltwater mitigation banks available with which applicants could purchase credits from, and so they have often either been forced to go down the permittee responsible mitigation path, which has many problems associated with it, or they have done no mitigation at all, because it said there was none available, and so it's been a real struggle.

What I was -- Kind of the point of the talk, at first, was to highlight the fact that we're having some really great successes within the Southeast of getting new saltwater mitigation banks permitted, so that we have a means of offsetting the adverse impacts that we cannot avoid or minimize, and so, within South Carolina, two new saltwater mitigation banks that are coming online that are selling credits like crazy, primarily to our big DOT, that are having to mitigate for a lot of these big infrastructure projects that they're engaged in.

We've had some really good success in Georgia on bringing a failing saltwater mitigation bank back into a success, using adaptive management, and so I am going to open it up, and I feel like I gave the briefest, and probably wholly inadequate, discussion of saltwater mitigation, but I at least

wanted to introduce the concept to folks who aren't familiar with it, and so I see we've already got a question for Sam, and so please go ahead.

MR. YOUNG: Actually, two questions. The first one is I am not clear on how the bank works and transacts and where the money comes and goes and what the benefit is that we get from that money and who would be the primary donor of that money for the mitigation, and that's one. The other one that I had long discussions with Tom Frazer, just as he was announced as the state scientist some years ago, was are you taking into consideration the guidelines for things like re-use of water and the high levels of nitrogen and phosphorus in re-use water that sprays all over the streets of every local community in Florida and how high those levels are allowed to be, versus the waterbodies that they affect may be 0.3 milligrams per liter of nitrogen, and what they're kicking out in re-use is ten milligrams.

Whatever happens on land is going to impact our waterways, and I've got a paper that I did on that, and the numbers were stunning, where there's a prohibition on phosphorus, period, yet we were throwing out like 8,000 pounds a year just in re-use water, and it was all going into our waterways, and so does that -- Is that part of your purview in this EFH and adverse effects, because everyone seems to be running to a different drummer on whether it's the Clean Water Act or the Department of Health or FEP or it's like everyone has got their -- They're like working in silos, but there is no consensus as to what it really should be, for any given area, to maintain a quality of water that would support seagrass or that would support a healthy estuary, where all the fish that go into the ocean start out in, and so I am curious as to if those types of things are part of this scenario you just described.

MS. COOKSEY: Some complicated questions there, Sam, and I can say that, while we definitely have a part of our focus on water quality issues, I think a lot of the conversation that you're dealing with with reduced water is probably going to fall under, like you mentioned, the Clean Water Act, and I think that that can sometimes be frustrating, when you hear people talk about that's a Clean Water Act issue, or that's an EFH issue, and, as a fed, and so I'm working under the federal government, we have legislative authorities that authorize our work, and we are, in many cases, limited by the silo of that legislative authority.

However, that doesn't mean that we don't reach out engage with our other partners, and I think a good way to highlight that is, within the Army Corps of Engineers is the federal agency that oversees the implementation of mitigation banks as well as in-lieu fee programs. However, even though the Army Corps of Engineers is in charge of that, they actually have what's called an IRT, an interagency review team, which oversees those programs, and that interagency review team brings together all the federal and state natural resource partners, in order to ensure that we are addressing as much of those concerns as we can.

EPA is at the table, and the U.S. Fish and Wildlife Service is at the table, and NOAA is at the table, as well as all of the important state agencies have a seat at that table, and we review every single application for a mitigation bank, or an in-lieu fee program, and we provide oversight of the development of those banks, as well as ensuring that they have met all of their success criteria throughout the lifetime of that bank, as well as ensuring that that bank will exist in perpetuity, so that, when it used for mitigation, it's permanent mitigation, and so hopefully that just kind of answers one part of your question. It was a long question, and I may have already forgotten some of the parts, and was there any part that I didn't answer yet?

I know. It came to me. You had asked about like how does it work, and, well, I can't -- It's probably impossible for me to answer that question completely for you in this very short timeframe, and anyone who starts to get into compensatory mitigation almost always goes and takes a weeklong course that the U.S. Fish and Wildlife Service hosts, just to get a baseline understanding of compensatory mitigation.

The idea behind the bank is that you have a private entity that will engage in either enhancement, restoration, creation, or preservation of an aquatic resource, and it will be a large-scale project. In mitigation banking, most of our mitigation banks are on the order of a thousand-plus acres, and so these are large projects that work on an economy of scale, so that we have consolidated aquatic resource restoration enhancement and establishment and preservation, and so they generate hundreds, or thousands, of credits, depending on the size of the bank. Again, they're under that oversight of the U.S. Army Corps of Engineers, as well as the IRT panel associated with the Army Corps of Engineers.

Those credits are then for sale, and so then, if you have an applicant who comes in, and they have a project, and let's say it's a residential development, and they need to create roads, and they're going to cross streams, and those streams are going to have a certain amount of impacts that they have already done avoidance minimization for, and they can no longer offset, and then the Army Corps of Engineers permit would say, okay, you have to mitigate for those impacts. They can then go to the bank and purchase those credits from the bank that allows them to offset those impacts.

MR. YOUNG: Is that money held in escrow to what is needed?

MS. COOKSEY: No, and so the private company that got permitted to develop a bank, they took on all the expenses of developing the bank. They didn't get any federal money, and, in fact, if you have a bank that involved previously-conserved land, you usually won't be authorized to do a mitigation bank there, because that's considered double-dipping, and so the federal government never sees the money for that credit.

The company gets authorized to do the mitigation banking, and they do the work, and we approve the work, and we make sure that all the performance standards are being met, and it's an incredibly long and complex process, and then, if someone needs to purchase credits, they do so from the bank, and we track credits sold, credits available, to make sure that no one oversells, that we don't have anything funny going on with that, but there is nothing in escrow or anything like that.

One of the reasons why mitigation banking is considered preferable to permittee responsible mitigation is that the improvement to the ecosystem, the restoration, has already happened before the impact occurs, and so one of the things that we worry about with permittee responsible mitigation projects is usually the impact occurs, and then the applicant will start a project to mitigate for those impacts, which that project -- Historically, we've seen it's often not successful, and so it was a way of trying to ensure that we had successful mitigation.

MR. YOUNG: That was my question, because, if you are -- If you're taking the money and mitigating from the get-go, based on what they're doing, monitoring that over a period of years, to see if degradation occurs, and, if so, are you going back to whoever bought the credit for more money and saying you're not meeting this.

MS. COOKSEY: Right, and so the advantage -- Why applicants like the mitigation banking system is that they pay the money to the banker, and now they have shifted all of the risk with the successful mitigation project onto the banker, but we're controlling that risk, because we don't allow the bank to sell the credits until they have met performance standards.

MR. YOUNG: So a long-term or a short-term --

MS. COOKSEY: I didn't hear the question.

MR. YOUNG: Is that over a long-term period or a short-term period?

MS. COOKSEY: It's in perpetuity. The banks are set up so that they will exist in perpetuity, and so, once a monitoring period of anywhere from five to ten years has ended, and it's considered to be a stabilized system, it often shifts to the bank will have -- Stacie, I don't know if you want to jump in, or someone else who does the mitigation banking, but they have a long-term manager, and it's often like the Audubon Society or any number of these large-scale conservation organizations will take over the long-term management, and that's part of when the bank is set up, that there will be a conservation organization that takes over the long-term management of the mitigation bank, after it's been proven successful and stable. Like I said, it's an incredibly complex thing, and so I'm only really brushing the surface, but I do want to get on to some of the other questions, and I think Laurilee had been the second name that I saw pop up.

MS. THOMPSON: Thank you. This is incredibly interesting, and so, if you have a system like the Northern Indian River Lagoon, which, in my lifetime, I have watched it go from being the most commercially-productive estuary in the entire state of Florida to now it's famous for the starvation deaths of hundreds of manatees, because all of our seagrass is gone. You couldn't put a seagrass mitigation bank here right now, because the water quality is so bad that the seagrass wouldn't survive.

Why couldn't -- If somebody is going to do a project, rather than letting them escape without doing any mitigation, simply because there is no seagrass mitigation bank here, why couldn't that entity, whether it's DOT or somebody that wants to build a marina or whatever, why couldn't they pay for some water quality improvement projects, because like, in our case, there is too many nutrients going into the lagoon, and it's that simple, and so why couldn't they take a whole neighborhood of homes and pay to take those homes off of septic and get them on to sanitary sewer or pay for a regional stormwater project to stop stormwater from going into the lagoon and instead have a nice stormwater park for the public to use? Why can't those dollars be used for different infrastructure projects to reduce nutrients from going into our estuaries? Thank you.

MS. COOKSEY: Those are some absolutely great ideas, and I will admit, at the beginning, that I am not very familiar with the Florida mitigation banking system, and I do know that they have an in-lieu fee program, and they do have mitigation banks, and I believe that they also have SAV mitigation banks, but the mitigation rule, the compensatory mitigation rule, doesn't come into effect unless we have an applicant who is proposing a project that would have an adverse impact, and then we have sought to avoid and minimize those impacts, and then we seek to offset.

If there is an ongoing issue associated with say non-point source runoff, those are a whole other host of state and federal agencies that are dealing with that, and that's not necessarily something

under the purview of the mitigation banking system, but we are continually trying to improve the mitigation banking system, where it does come into play. I hope I at least partially answered your question, Laurilee.

MS. THOMPSON: So, if there is no seagrass mitigation bank available in the Northern Indian River Lagoon, and yet NASA is going to redo a $50 million causeway project, could you -- That will impact seagrass, and so, since there is no seagrass mitigation bank, could you make them do something like take out part of the causeway and replace it with pilings, to increase the flow of water into the estuary? Can you do something like that and make -- You know, cap off a dredge hole and bury the muck, or do something like that? Can you do that?

MS. COOKSEY: Again, we are limited by our legislative authorities on what we can and cannot do at any point in time, but I think you're bringing up some really interesting ideas, and that's where in-lieu fee programs start to come into play, in that they are a little bit more flexible and adaptable, and so, remember, under the 2008 mitigation rule that I talked about, you have banks, and then you have in-lieu fee programs, and in-lieu fee programs are often run by state agencies, local municipalities, or non-governmental organizations, where fees are collected for adverse impacts and then -- Again, I can use New England.

They collect fees for adverse impacts, and then, once a year, they have a request for proposal that goes out in the New England area, and they fund projects that do all kinds of interesting work to improve overall habitat quality. There is certainly room, within this structure, to do those kinds of approaches, and, to a degree, when it comes to compensatory mitigation, each U.S. Corps of Engineers district is a kingdom unto themselves. Each district is kind of in charge of determining their approaches to compensatory mitigation, and so, if those are issues in Florida, then it would be probably a good idea to reach out to the Army Corps of Engineers and their mitigation program and kind of begin those discussions. Hopefully that at least is getting at some beginning of the questions answered.

MS. THOMPSON: Yes, and that was very informative. I appreciate that. Thank you.

MS. COOKSEY: Thank you. Wilson.

DR. LANEY: Thank you, Madam Chair. Sam and Laurilee have asked some extremely interesting and insightful questions, and I would like to suggest that, at some point in hopefully the not-too-distant future, we could have a session, at least a half-day session, that would focus on the whole concept of mitigation.

Many of you have heard me get on my soapbox about the fact that, from my perception, much of mitigation is mythical, and it makes us feel good, because we require mitigation to offset impacts, and the big question, and Sam alluded to this, I think, earlier, is whether or not it really, really does what it is supposed to do.

There have been dozens of follow-up studies that show that it lacks a lot, and there are cases though, I will acknowledge, where the establishment of banks may do a lot of good to offset habitat impacts. However, in many cases, those banks are not necessarily established unless the Corps district has this requirement that they be established within the watershed where the impact is occurring, and sometimes you're not even in the same watershed, and so I will, again, not get on

my soapbox too much, Cindy, that I normally would do if we were meeting in-person, and just say we need to have further discussion about this, and I would hope that we could maybe work with Roger and Myra to put together an agenda for maybe a half-day session at some future Habitat AP meeting, maybe even next spring, and I think that would be very timely. Thank you.

MS. COOKSEY: I love that idea, Wilson. I think it would be incredibly helpful to get this concept addressed in the future in a much more in-depth fashion, and I will say that I agree with you, Wilson, that, time after time, we have seen mitigation projects fail, or not meet the standard that we had hoped for. The only thing I will say is that we're constantly trying to learn from our failures in the past, and I think that's why you tend to see folks are getting away from the concept of creation, when they look at mitigation projects, and we much prefer restoration and enhancement.

We have seen that those have been more successful than say the creation of a wetlands in previously upland area. The restoration in a filled area has usually been more successful, and the other thing that you were kind of bringing up, and I think Laurilee also was kind of bringing up, is the concept of mitigation where the impacts are occurring.

When we look at compensatory mitigation, the preference is that it is in-kind and that it is within the same watershed, and so in-kind means, if you are impacting a stream, a freshwater stream, then you shouldn't be getting credits from a freshwater wetlands bank, and you should be getting stream credits.

Further, if you are impacting tidal fresh, you should be getting credits from a tidal fresh bank. If you are impacting a low-salinity habitat, you should be getting credits from a low-salinity bank and so on and so forth, so that the credits are actually in-kind and not out-of-kind, although the final rule does have a way of applying ratios, so that, if you have to go with out-of-kind, because there is no in-kind available, and rather than not requiring any mitigation, within the rule, it is better to require in-kind in another watershed, and, if that's not available, then going with out-of-kind, but, instead of saying that I'm impacting one acre, and I need to purchase two acres of mitigation credits of an in-kind, I need to -- Instead, I will purchase twenty acres of an out-of-kind.

That is an example of the kind of ratios that might be used within the program to deal with that, but I would love the idea of bringing in speakers and discussing this further, in order to improve mitigation banking throughout the Southeast.

DR. LANEY: I agree, Cindy. Thank you so much, and I think it's only going to get more and more critical under the umbrella of climate change.

MS. COOKSEY: Yes, I agree. I want to keep moving along, and so I've got David up next.

MR. WHITAKER: Wilson gave me a lead-in here of the question, and it's mostly a rhetorical question, perhaps, and so I don't expect a long answer, but, given that NOAA and NMFS focuses on essential fish habitat, water quality primarily, in making these determinations on permits and such, and given that the President is in Scotland talking about climate change, and Congress is currently, hopefully, talking about putting a lot of money into climate change actions, is there any possibility that -- Or have you heard anything that carbon sequestration, or something along those lines, might be woven into the fabric of how decisions are made on impacts?

MS. COOKSEY: As of right now, that's not a discussion that we're currently having related to compensatory mitigation, but I know that there is a history of NMFS and other federal agencies discussing carbon sequestration in other areas. Hopefully that addressed your question, and we will move on to Anne.

MS. DEATON: Cindy, thank you. I was just going to add some information for Laurilee's comments about Indian River Lagoon and how do you do mitigation when the issue is water quality, and the water quality affected the seagrass, but I was just going to add that it's not -- Mitigation isn't the only tool, and so, when you have the EPA -- States have to rate their waters, and, if water are rated as impaired, that puts them on a list, an impaired waters list, which triggers that TMDL measures, or measures to reduce the impact are put in place.

That is how you get to mandatory nutrient reductions, or whatever the problem is, sediment or whatever is, and so, for example, that was done in several of our nutrient classification -- We call it nutrient-sensitive waters, and they had to take measures across different sources, and so wastewater treatment plants have to either improve their treatment of effluent or shift it to on-land disposal, but it addresses agriculture or any of the industries in development, and so it addresses runoff as well as point sources, and so I think, for like the Indian River Lagoon example, that might be what's needed, and that's really to restore something, rather than -- I think mitigation, hopefully, is to reduce the impact, is to offset the impact.

The trick with mitigation also is to get the right type in the right location, like you guys were just saying, and so, for us in North Carolina, we do have mitigation, but it's more for the freshwater aspect, because the estuarine waters -- They don't allow as many impacts, but, also, it's very hard to do mitigation, because they say they can't afford the land, and so they could go buy a whole lot more land further upstream, and do more restoration, and so we see that a lot. We see out-of-place mitigation, which isn't, in my mind, what we need to really improve water quality, and it's got to be downward to impact this. That's all. Thank you.

MS. COOKSEY: Thank you, Anne. I see we've got Sam back up.

MR. YOUNG: I have quite a bit of experience with FEP and TMDL, and we exceeded -- This is in Marco, but we exceeded way above and beyond the criteria, three years in a row, for both nitrogen and phosphorous, and I knew the local folks at DEP, and I, well, badgered them enough, and, once I was elected to the city council, all of a sudden, my credentials went up by miles, and I went back to them again, and I said, hey, we have exceeded it, and we have violated the rule, and you owe us official notification that we are impaired and that you subject us to TMDLs or whatever.

They sent the letter to the city, and it was written to the council, and I was copied on it, and so, when that was showing up on the screen, that got everybody's attention, and so what did they do? They went and spent a quarter-of-a-million dollars with Dr. Harvey Harper in environmental research and design to do an eighteen-month study, isotope testing and what have you, and so still, even with that out, the city has done nothing.

The point I'm making is that, if we do -- I think it was Wilson who mentioned earlier to have a half-day on this type of topic, that Florida DEP be included, and Florida DEP, if they don't enforce -- If they don't use the teeth that they've got, then all they are is just a name, and they're not doing

anything about it. There is no penalty, and there is, okay, well, you did this study, and we'll give you a few more years of ruining your waterways without doing anything proactive, and so, to me, it goes back to enforcement, whether it's DEP or local code enforcement, of the fertilizer ordinances that are out there.

All that stuff killed the waterway that I bought in 2005 that I could snorkel in and pick up yard waste bags that the landscapers would pitch over and other detritus, but there was still grass. It was clean enough to see ten foot down, and I left and moved over here to get away from, fifteen years later, the turbidity that made my canal look like Starbucks coffee, and it went unmitigated, and it still goes unmitigated to this day, and so, if Florida DEP is not going to step up and do their job, I think we need to question that, and the Army Corps -- They are the ones sending the polluted water into Indian River Lagoon that the -- I can't remember her name now that was up there that spoke about that. I am a little reticent to want to reach out to the Army Corps to do much of anything, and is there a better way, and that could be a good half-day topic.

MS. COOKSEY: Okay. Well, thank you, Sam, and I think, kind of coming out of this discussion, is we will definitely be revisiting mitigation again sometime soon, in one of our upcoming meetings, as a panel. We are at the point where we are ready to move on to the NCCOS mapping in the Wilmington-East Wind Energy Call Area. I do want to give folks like a five-minute break, in case someone needs to get a cup of coffee or whatnot, and so if folks can be ready to start up again with Chris's presentation at 11:00, and that would be great, and so a couple of minutes, and then we will be back on with Chris at 11:00. Thanks.

(Whereupon, a recess was taken.)

MS. COOKSEY: I wanted to welcome Chris Taylor, and potentially Avery Paxton as well, and I don't know if Avery is here with you, Chris, to discuss the benthic habitat mapping that you guys have been engaged in in the Wilmington-East Wind Energy Call area, and so thank you for sharing this with us, and please go ahead.

MR. TAYLOR: Thanks for the invitation, Cindy. I think Avery will be joining, and we'll be doing this tag-team, and I appreciate the invitation to speak to the Habitat Advisory Panel. It's good to be back with you all. It's been an interesting conversation so far, and I look forward to this particular discussion. As we all know, wind energy offshore renewable development is ramping up quickly, thanks to some actions by the current administration.

I just want to give everyone a reminder of where we're coming from, and so, again, my name is Chris Taylor, and I'm an ecologist with NOAA's National Center for Coastal Ocean Science. Both Avery and I are based in Beaufort, North Carolina, at the Beaufort Lab, although, obviously, calling from our homes over the past eighteen months.

Our Marine Spatial Ecology Division has the expertise to conduct characterizations that allow us to understand the geophysical and the ecological and community metrics. We often provide those data services and data layers either as newly-acquired data or a syntheses, as individual products, but, often, we're being asked to develop them and integrate them into tools that can be used for coastal planning, marine spatial planning, and coastal ecosystem management. All of these feed into NCCOS's goal of making science-based solutions for coastal ecosystem management.

The project that I'm going to talk to you about today was an interagency agreement, and cooperative agreement, between us and NCCOS, and the National Marine Fisheries Service at the Beaufort Lab as well, led by our partners at the Bureau of Ocean Energy Management and in cooperation with the University of North Carolina Institute of Marine Science and our hydrographic partners at Geodynamics here in Morehead City.

This fulfills our overall mission in the Biogeography Branch and the Habitat Mapping Team to conduct seafloor mapping and ecological assessments that fulfills management applications. In this particular case, in the right-hand panel, we're focusing on offshore wind, but we're recognizing that offshore wind is just one of many uses in the coastal ocean. We have conservation concerns and ecosystem function concerns, and we have recreational uses and commerce and navigation, and all of those present a complex myriad of uses along our coastal ocean.

Our team conducts assessments in order to help coastal managers understand the uses of the coastal ocean, to make decisions that weigh the impacts to conservation and natural resources and potential conflicts of those resources. We do this through planning, directly engaging our partners, and, in this particular project, it was the Bureau of Ocean Energy Management. We do a synthesis and evaluation of existing data, and, often, we are collecting new data after a gap analysis and prioritization.

We then characterize the ecosystem, which will highlight a few of those components here, which take a multitude of layers and synthesize them down into visual products that allow us to understand the ecosystem properties, as well as some of the human uses. We're not going to talk specifically about the human use components here, and, instead, we're going to be talking about our ecological assessments and the seafloor mapping that we conducted in the Wilmington-East area off of North Carolina.

This is the original wind energy call area of Wilmington-East. This was the original call area that was developed through BOEM and their scoping and siting process, through their engagement with coastal partners, and this is a massive area, and our original objective was to provide a map of the seafloor that characterized the complexity and the geomorphology of the seabed that will lead us to an understanding of the distribution of habitats here.

Our particular focus was understanding the distribution of rocky outcrops, as these are potentially sensitive habitats that are host to valuable commercially and recreationally-important species in the snapper grouper complex. Our goal was also to identify any cultural resources that were in the vicinity.

It's a relatively large area, and it's quite massive, and it required a very thoughtful approach on how we were going to map this space. It's exceeding 1,100 square kilometers, which, if we were to conduct a full-scale multibeam survey, it would require much more time and money than was allotted to this effort, and so we -- Understanding these requirements and the goals for us to describe and characterize the features on the seabed that represent habitats for fish, we took the approach of a hierarchical mapping approach, where we used a few different tools in order to cover the area completely, but then give us ever-refined details of what's on the seabed.

Again, this hybrid hierarchical approach began with adapting some of the survey mapping tools, and, in this particular case, we were using a combination of side-scan sonar and multibeam sonar.

Again, if we were to use multibeam sonar by itself, we would have to increase the scope of the project by about four-times, and that's both in the effort and the cost of the work. Instead, we used side-scan sonar, that allows us to cover very wide swaths of the seabed and allows us to depict the features that are on the seabed and then focus our attention using multibeam sonar.

Side-scan sonar mosaics help us depict both the texture and the hardness of the seafloor, and this is the entire Wilmington energy call area. The lighter colors represent harder returns from the side-scan, and the darker areas represent softer returns. Harder returns could be represented by coarser-grain sediments and sands, and harder returns could also represent hard material on the seabed, like shipwrecks or artificial reefs or exposed rock and rocky outcrops, and the softer returns then would be finer sediments.

We manually scrutinized these maps in order to give us an indication of the types of habitats that are on the seabed. Scrutinizing the side-scan mosaic that was produced to less than one-meter resolution allowed us to delineate the individual rocky outcrops, delineate the ridges and the rubble and the features that didn't appear to conform with what we thought would be sediment or sand waves that made up the vast majority of this call area.

We were also able to depict here -- Those ridges and rocky outcrops are represented here in the red dots, and we also were able to depict the cultural resources, the shipwrecks and other features and targets that required further investigation to identify their source.

Closer scrutiny of this side-scan mosaic, which is really quite remarkable in its quality, given some of the surveys were conducted in very adverse sea conditions that we commonly encounter when we're surveying in the summer and fall off of Cape Fear, but we were still able to identify a number of rocky outcrops and ledges of various sizes and complexity, and so, here, the red dots represent targets on the seabed that likely represented rocky outcrops and rubble. The line that is sort of in the middle of the panel there, that's sort of that question-mark shape, or that ear shape, represents a very large and expansive rocky outcrop and ledge system that extended almost a nautical mile in length, total.

The multibeam, on the other hand, allowed us -- Simultaneously using that to survey the seabed, while we were conducting the side-scan sonar, it resulted in about 30 percent coverage over the entire call area, but then we were able to focus our attention. While that provided us very accurate depth readings in a narrow strip along those transits with the side-scan, we weren't able to provide 100 percent coverage, which is what we would need to very accurately characterize the seabed habitats.

Instead, we focused our attention in two areas with multibeam, around those clusters of rocky outcrops that were in the northern part of the call area and in the southern part of the original call area, shown here by the full coverage of the rainbow plots. What we're showing you here is multibeam that is represented as depth, with the red being the shallower regions and the blue being the deeper regions, and you will see the northern and southern polygons, or those sort of odd rectangle shapes, represent the full coverage where we focused our attention for higher-definition mapping.

Again, this is in the northern region, and this provides us with a much better resolution and depiction of the rocky outcrops, and you can see the ear-shaped ledge and reef, again extending

about a nautical mile in total length, with various complex rubble features that were mixed within the sand waves, both the large and small-scale sand waves, and various sediment types in the unconsolidated habitats.

It's really a -- This is very similar to the types of seabed habitats that we observe around these cape features. Even though it's surrounded by vast tracks of sand and a preponderance of sand, the movement of the sediment results in the exposure of these rocky outcrops, and some of them can persist indefinitely, and some of them we think may be covered or uncovered, depending on their relief.

The relief that we're able to depict here is to the centimeter resolution in the vertical scale, and these maps are produced at about a half, or one-meter, resolution in the horizontal scale, and so a very high-resolution definition that allows us to understand the complexity of the seabed and the habitats that they might contain and then the fishes that they might support.

This is in the southern region here, and you won't see a very large geomorphological feature, except towards the east, which was actually represented by a shipwreck. In this case, we were surprised to notice the number of small pockmarks and rocky outcrops that were representing rubble-type reef features and not the sort of prominent ledges that we encountered in the northern region, but still a great number of rocky outcrops in the southern region.

Putting it all together, of course, gives us a more complete picture of the entire call area, and this helped us to define some areas of interest that we wanted to characterize further and validate and groundtruth, to be able to understand the biological cover and then the ecological communities that these areas support.

MS. PAXTON: Like Chris mentioned, our team spent a lot of time using side-scan sonar and multibeam echosounders to map the seafloor and its associated structures, and one of the things that we also did, while we were doing that mapping campaign, was we were using splitbeam echosounders to map the distribution of fish and other organisms around these seafloor structures.

Briefly, the way the splitbeam echosounders work is they emit pings of sound into the water, which reflect off of the objects whose density differs from that of the surrounding seawater, and so, here, what we're looking at, in Panel A, is the dots above that red line, and those each represent fish, and so that is a relatively loosely packed school of fish, with some individuals, that you can see on the far right of Panel A.

To make sure we're all on the same page, I do want to point out that the seafloor is shown here as the red line, and so, again, in Panel A, if we look over to the right-hand side, we see the area where the seafloor dips down and then dips back up, and is like an inverse-terrace, is the word I am coming up with, dip there, and so that is a ledge formation.

If we look at Panel B, we're seeing a habitat that is a little bit lower in relief, and this is another hardbottom habitat that was verified visually with our dive team, which we'll talk about a little bit later, and, again, here we do see that close association with this habitat and the large school of fish that you see in the yellow and red and green colors to the left of Panel B.

One of the things that is pretty challenging, that Chris will talk more about towards the end of this presentation, is determining whether a flat pavement that is covered by sand is a flat pavement covered by sand or if it is a more sandy and unconsolidated bottom that extends deeper beneath the surface, and so, in these two, C and D, one of the things that we note is this looks like a relatively unstructured bottom, and it actually has been confirmed by our divers, through visual assessments, that these are low-lying flat pavements, in some cases covered by a thin veneer of sand, and one of the things that the echosounder surveys, the splitbeam echosounder surveys, do is they help us zero-in on some of these habitats, because we oftentimes see this close correlation between the presence of large fish schools, or individual fish, hugging the bottom near these features.

Using the information collected by the splitbeam echosounder, we can then portray maps of the distribution and density of fish. On the left-hand panel, we're showing you the side-scan sonar mosaic, and, on top of that, we have placed dots corresponding to observations of fish density from the splitbeam echosounder, and each of the dots is scaled according to the magnitude of the fish density, and these are representative of densities of large fish, and so fish that are over twenty-nine centimeters in length was our threshold for that, and so, again, bigger dots are higher densities of fish, and smaller dots are smaller densities of fish.

From what Chris explained earlier, we have the clusters of hardbottom that are really prominent in the northern and the southern areas of the call area, and we can see that, just visually, there seems to be a correlation here, with high fish density occurring around these features.

If we look over to the right-hand panel, now we're displaying a way of quantitatively classifying this, and it's called a hotspot analysis, and it's something that we do within a geographic information system, a GIS, framework, and what it shows is it shows, statistically, that there are hotspots of occurrence for these fish, and the way we interpret this is that the red dots indicate that there is a 99 percent confidence that there is a hotspot of these fish aggregations, and the orange is a 95 percent, and the yellow is a little bit less, at about 90 percent confidence, and so, again, the story is emerging that, through the splitbeam echosounder mapping the fish, and through quantitative analyses, such as the hotspot analysis, we do see that there is this tight coupling of the locations of these fish hotspots with these seafloor features, especially the emergent hardbottom.

One of the things that we need to do, as part of the habitat mapping workflow, for all of our projects, including this one, is that we need to validate the seafloor mapping, as well as the splitbeam echosounder observations, and we do this through groundtruthing, and our team typically conducts groundtruthing using a variety of tools in our toolboxes, ranging from drop cameras and remotely-operated vehicles to, in this case, scuba diver surveys with our scientific diving team.

When our divers are underwater, they are not only helping to validate the observations that we gleaned from the seafloor mapping campaign, but they are looking at things like is there actually a ledge here, and, if there is, what is the height of the ledge, and so they're actually measuring the habitat morphology.

They are specifically also interested in verifying the particular categories of reefs that we see, and so are they flat pavements, are they flat pavements that are exposed or covered by some sand, are they more rubbly, and so, while the divers are classifying habitat morphology, the other members

of the dive team are conducting surveys for the biological organisms. Specifically, they are counting and identifying fish over fifty-meter swaths of the reefs, and they also look at smaller sections of the reef, to identity more cryptic species that might be hiding within the relief provided by these hardbottom structures.

We also count and identify the invertebrates and macroalgae, using various methods, including taking photographs, from which we can identify percent cover later, as well as actually identifying some of these critters while underwater.

What we learned through the diver surveys also included a rigorous ecological assessment of the fish communities and the benthic invertebrates and macroalgae that rely upon these hardbottom habitats, and, if we take it back a little bit, to the seafloor mapping realm, one of the other main objectives that I have hinted at, and Chris has hinted as well, is that we needed the divers to also help with classifying habitats.

In the upper-right-hand panel, and, again, see that northern and southern area with the high concentrations of hardbottom habitat, we had our divers go in and visually help classify and verify the conclusions we've drawn from the seafloor mapping, and, if you look at the left-hand bottom panel, for example, you can see the black circles, and each of those circles corresponds to a specific location where we put divers in the water and they identified that there was a ledge feature there. The ones in the stars, for example, are areas that are more rubbly, classified as a mixed hardbottom and sand type of feature.

The other thing that the diver fish surveys did was that they helped to validate the results from the fishery echosounder surveys, and you can see here that we have dots, again, scaled to the fish density, and this is the total fish density calculated from diver observations. Bigger dots are higher fish density, and so we are not only able to, again, see in a different format, through visual observations, this correspondence between the features and the presence of high fish density, but we were also able to help identify what species of fish we were actually detecting in the echosounder results.

The reason that's important is because, while the fishery echosounder can give us an understanding of the fish size, it cannot identify fish species, and so having the visual observations from our dive teams, where they could identify particular fish species, was really critical to this effort.

Overall, the habitat assessment, including the mapping and the ecological assessment components, helped inform the wind energy planning for this call area off of North Carolina. We identified clusters of hardbottom that were essential fish habitat, primarily in the northern and southern sections of the call, and, in response to this, BOEM used our research, as well as work from others, to revise the Wilmington-East call area so that it excluded hardbottom, specifically in the southern region, and helped avoid conflicts with shipping traffic.

MR. TAYLOR: We didn't go quite as far as classifying the entire habitats throughout the call area or in the eventual wind energy area, and that was because we were challenged by a particular aspect of the hardbottom habitats that occur off of the South Atlantic coast. I am showing here four panels, and our current challenge -- While we can very easily depict the high-relief rocky ledges, and that's just shown by a change in elevation and relief and slope, we can often detect the

patch reefs and rubble, because they form very different shapes and complexity features, rugosity features, on the seabed, as compared to the unconsolidated sand shown here in the bottom-left.

What's more challenging is differentiating to, again, what Avery pointed to, the pavement from the unconsolidated sand, and this is going to require much more -- In the end, what we discovered is that this is going to require much more groundtruthing than we were able to put forth in order to provide an accurately-assessed classification map for that region.

What we know though is that tools that we have already in our arsenal, but are currently exploiting in a different way, is that there is particular characteristics of our multibeam sonar mapping that we may be able to exploit in order to differentiate those two bottom types. Elevation, again, shown here on the red arrows going up and down, help us differentiate the relief features from the low-relief features, and a property called backscatter, which is the intensity of sound reflection, similar to the side-scan sonar, but in a slightly different way, and that backscatter intensity, coming from multibeam, may give us an indication of the flat pavement and the biological cover and contrast that with the unconsolidated sand.

All of the data that we collected in the wind energy call area for Wilmington-East is available for us to pursue additional modeling approaches, and our team, in recent years, has developed likelihood-based machine learning supported predictive habitat modeling and mapping. This example that I am showing here is the New York Bight and a project that was completed a couple of years ago, where we were contracted, on behalf of the State of New York and BOEM, to understand the distribution of habitats within another planning area that is being discussed.

The panels on the left here are the probability of the currents for a particular substrate, like pebbles, that were groundtruthed, and you can see all the groundtruthing point that are represented by blue dots and red dots, and the red dots represent the presence of that particular sediment type, and the blue dots represent the absence.

We incorporated those into the machine learning models that provide not only the probability of occurrence, but also the coefficient of variation in uncertainty in making those predictions, and we can do that over a range of seabed classes, from different sediment types to different biological cover that we can attain through our groundtruthing technique, and so this is a new approach now that we may be able to apply back to the data that we have already collected in places like the Wilmington-East Wind Energy Area.

We scale that up into much larger areas, on the right panel there, and those models can be scaled up to much larger domains, where we use the complexity of the seabed from larger-scale geomorphological models to understand the distribution of large-scale suitability for hardbottom, and, in this case, this would help guide our surveys, to understand the exact and higher-resolution features that are on the seabed.

Oftentimes, we want to drill way down, and our team is also using more autonomous underwater vehicles and artificial intelligence to depict things at very fine spatial scales, and we think that this is necessary for us to get to an understanding of the biological cover and the habitat value of those features on the seabed, and then linking that to the fish that they support, and these autonomous underwater vehicles are much more -- They're providing a much more efficient and economical path towards enhancing our groundtruthing capabilities and allowing us to provide repeatable

photomosaics in areas that we think may undergo either rapid change from natural causes, like sediment dynamics, or may just undergo change from the actual installation of infrastructure on the seabed.

We've adopted some of the techniques from the oil and gas industry and from studies of archeology, to understand more about the site formation around things like artificial reefs and shipwrecks and how that may be related and analogous to what might happen to the seabed once you install offshore wind infrastructure.

I think the report is out, and I think was attached as part of your briefing book, and we have a couple of links here, and I think these slides will be shared, and these links will take you to the project page for the Wilmington-East effort, as well as a couple of videos and a Story Map that summarizes or can provide more visual examples of the work that we conducted.

MS. COOKSEY: Thank you, guys, so much for presenting that. It's very useful information, and I want to open it up to everyone, but, since I'm Chair, I get the first question. Based upon where you did your work, and you did the project, and you had your areas where you had your high-definition mapping, and you were able to kind of refine the wind energy call area. Now, if you were asked to take a second pass of area, are there any regions of the now smaller call area that you would consider a high priority for high-definition mapping? Have you been able to identify anything like that?

MR. TAYLOR: Actually, if you go back to I think it might be Slide -- It might be 23 or -- 23 would be fine, or 22. The area that we -- We discovered a few things during this survey. One was the cultural resources there, and I believe that those have been assessed by our colleagues within BOEM and the Monitor National Marine Sanctuary, and we have confirmed them to be potentially sensitive, and a few of them historical, and some of them were quite well known in there, and one of them is a well-known shipwreck.

That northern region, and so, in the central part of the call area, there is some clusters of red dots. That is still -- That remains a very prominent ledge feature, surrounded by some more sort of pockmarked rubble mounds, and I think that could call for closer scrutiny, assessing the additional rubble that was in that surrounding area. We have the multibeam that could support that effort already, but additional groundtruthing would be useful there, and not necessarily for that large, prominent ledge feature, but for that rubble and the pavement that may surround it

MS. COOKSEY: I am rapidly writing notes down on that. I appreciate that, and I may be reaching out to you later, separately, to get some more ideas behind that, but I will say the other item that really intrigued me, from your presentation, was the photomosaics and the potential for that technique to be used for evaluating impacts. Has that been used in the past for the oil and gas, and is there any talk of using that in any of the wind energy areas that are closer to construction, for monitoring?

MR. TAYLOR: In oil and gas and in defense, yes. In fact, there are several tools that are available to that industry to be able to provide automated change detection, when they're surveying things like pipelines or other parts of oil and gas infrastructure.

We have been exploring some of the developments in that industry and in concert with some of these large-area imaging photomosaics, in the realm of restoration, and we're looking at coral restoration both in shallow and mesophotic corals and developing these photomosaics to cover large areas to understand the context of change of all the coral colonies, including those that may be transplanted or explanted and propagated for restoration. We think that's on a very, very small scale, and so a centimeter scale.

We know that we have the type of controls for our navigation and motion of many of our sensors and that we're going to be overlay these surveys and be able to detect changes at a larger scale, say the meter scale, that we would be able to detect using our multibeam sonars. The challenge that we come up against sometimes is the number of images that we use and the size of these photomosaics.

Unless you're going in there and manually scrutinizing each of the shapes of the habitat features, we're really needing to call into automated image analysis, as well as machine learning techniques, to provide that sort of -- The objective and repeatable approaches that take some of the human element out of it, and those are the methods that we're trying to work on now, actually actively, within our team.

MS. COOKSEY: Okay. Very exciting stuff, I will say. I do want to open it up to the other panel members, and I see that Wilson is first up.

DR. LANEY: Thank you, Madam Chair. Chris and Avery, tremendous presentation and tremendous work. Just thank you all so much for doing this, and thanks to BOEM for funding it, and it's just really incredible what modern technology has done for your ability to survey the habitats in these sort of areas, and I wish we had it forty years ago.

The question I have for you is, first, a clarification. I know that you and Avery both used the term "rubble", and I know some of us on the panel have, in the past, associated the use of that term with debris that was caused by mobile gear traversing hardbottom, and I am assuming that, the way you're using the term here, you're talking more about natural fields of rubble, but so, first of all, if you would clarify what you mean by the term "rubble", and then my second question is could you, in fact, be able to detect anthropogenic rubble fields that were caused by mobile fishing gear from natural rubble fields that are just natural features? Thank you.

MR. TAYLOR: Thanks for that, Wilson, and I apologize for the lack of precision in the language and the terms used here, and we did, in fact, mean, in all cases, rubble that was natural, naturally occurring. It's actually a CMECS classification that we would more accurately call mixed hardbottom and sand, and I apologize for that, for that discrepancy there.

Can we detect the rubble that would be caused by the effects of fishing, and, yes. In the side-scan imagery, although we didn't map it and delineate it, we did notice that there was definitely signs of dragging, probably net dragging, within the call area that we detected with the side-scan imagery, and then the rubble that may be caused by those activities would be likewise depicted, although I'm not sure if I could put my finger on examples from this particular project.

MS. COOKSEY: Okay. Thank you for that. Rene, you're up next.

DR. BAUMSTARK: Thank you. Chris and Avery, this was a great presentation, and I think it demonstrates how you all and your group really does excellent work, and I'm always excited to hear how you are moving forward with technology and really advancing us, particularly with the classification of the habitat types. I feel that a lot of mapping is done, and often that next level of associating it with the fish is not very done on a scale like this, because it's difficult, but the fact that you're identifying new tools to do this, especially things like -- I see a lot of potential, and so it's exciting to see this.

I wanted to ask about -- So I don't know the area well, but I imagine there probably was not very good maps of the area. In your work here, did you guys come across anything that -- In identifying that area, that did not have very good data, and did you guys find any surprises that would potentially change or that they weren't expecting when they initially identified this area for the use for wind energy?

MR. TAYLOR: I'm happy to answer this question, and I guess some of the surprises were some of the cultural resources that we encountered, some of the shipwrecks, and then there were some features on the seabed that had particular shapes and complexities that we had sort of attributed that mixed hardbottom area and then the challenges that we had of -- There was probably a lot of pavement in that region that we weren't able to accurately assess and groundtruth, and I wish we had more time to do that, using some other tools, maybe some shallow-penetration sub-bottom profiling, or just much more groundtruthing with the autonomous vehicles.

I think one of the other challenges was we had a vision of what the bottom would look like, especially the mixed hardbottom and sand, that we normally picked out of the side-scan imagery, and the multibeam imagery, as just being a shape and a texture on the seabed that was different than the surrounding say mega-ripples or sand waves, and what was surprising is that, oftentimes, we would find those features, and we would put divers in the water, and the divers would be conducting a sand dive, and it was a very interesting --

It was probably just a change in the sediment types within that caused a difference in sort of the formation of shapes and ridges that actually wasn't rocky at all, but was still sand, and so the -- It helped us appreciate the sort of wide variation in how sand and sediment accumulates and forms on the seabed there that can mislead us, in some cases, but, once you start looking at the backscatter, it sort of led us to maybe not a more accurate, but a closer interpretation of what we would expect when we started sending divers down later on in the project. I think that was the biggest surprise, is our inaccuracy of our initial interpretations of things like the side-scan sonar and until we get the good multibeam systems.

I will comment that the data were very lacking in this area, prior survey data, except around particular hazards, like around the City of Houston wreck and around closer to the shoal, and I will recognize here that only about 15 percent of the intercontinental shelf of the South Atlantic has been mapped to any degree, and far less of that has been interpreted to any degree, or classified to habitat, and so we're woefully lacking in our understanding of the broader distribution of habitats among the South Atlantic.

DR. BAUMSTARK: Certainly you guys are flashing the light in a very, very dark part of our world, and it's exciting to see it come together. One more quick question. All the effort and work that you all have done, has it been coordinated, and can it be used for any future stages, if this plan

does get implemented? I'm sure they will have to do a lot of work, and have you considered the future needs of this data beyond the assessment, this pre-assessment? Can it be used? I'm sure they will probably have to go back out again and collect a lot of data to actually implement the plan.

MR. TAYLOR: Avery, do you want to take that one?

MS. PAXTON: Sure. Right now, we aren't planning any immediate follow-up assessments, but we are -- Yesterday, for example, we did talk with BOEM, and I think Brian Hooker may have his hand raised in a second, and so he may have more insight on this, but we did talk about future applications of especially some of the newer habitat mapping tools that our team has been using and some of the approaches we've been developing since the study was conducted several years ago.

DR. BAUMSTARK: Thank you.

MS. COOKSEY: Thank you, guys, and, yes, Brian is next up on the list.

MR. HOOKER: Thanks. Maybe, before I go ahead with my question, I will help Rene out a little bit, and so I'm Brian Hooker, an AP member, but also I work for BOEM's Office of Renewable Energy Programs, and so the first question is were we surprised, and I think, and Avery and Chris can correct me if I'm wrong, but I don't think that we were surprised. The South Atlantic area is kind of known for this kind of patchy hardbottom distribution, and so I don't think, in general, there were necessarily surprises.

I think getting the higher resolution of where these areas occurred within that, at the time, call area, and then eventually wind energy area, and now currently proposed sale area, which we'll get into next, and that will definitely factor into our analysis of the EA, again, which I will get into in the next presentation.

Then, kind of following-up on what Avery was saying, we don't currently have another project, or follow-up study, with NCCOS on this, but, as I think you were alluding to, if this area were to be leased, any developer would have to survey areas that they would potentially disturb, from either the placement of even buoys on the bottom or future offshore wind facilities, and that would need to be surveyed as well, and, even if there was a specific follow-up survey to this, this would definitely influence how that's done, and we have a similar project that we did up off of Virginia, where a lot of baseline work was paid for by the government, and by Maryland as well, and then the developer supplemented that heavily with their own surveys.

On to my question, and my question was more on the splitbeam echosounder information, and so, Avery, that might be you. I think I am always intrigued with how much you can do with that information, and you were able to, using the splitbeam echosounder, divide fish into different size classes, and the density as well, and I guess my question was more around the density, and were you -- I don't think you took it this far in the report, but were you able -- Were the densities based on actually an enumeration of the number of fish? Was there an algorithm that you could actually tell number of fish, or was it basically just the density of the returns, and I just wanted to understand that density calculation a little bit better.

MS. PAXTON: Chris, do you want me to take that?

MR. TAYLOR: Yes, and go ahead.

MS. PAXTON: Great question, Brian, and thanks for bringing that up. I guess, before I get into the meat of your question, one thing that I do want to say, that I didn't touch on, is that the amount of the water column that the splitbeam echosounder is detecting fish within is pretty narrow, and so you can think of it as a really narrow flashlight beam going down, and, because of that, our density calculations are based on a particular distance across the seafloor and, in some cases, the volume of the water.

What we were doing when we actually go through and detect fish is we have an algorithm that we can use that detects individual fish, and we can also detect schools of fish, and so, when we detect the schools of fish, we can do some things by looking at basically the size of the fish on the outskirts of the school, or we can really see them well, to help us get an understanding of how many are in the school, and so we put those two things together to get the density values.

The other thing that I do want to say is that the multibeam echosounder that we used for the really high-resolution mapping, with the rainbow colors, we can actually use that same instrument and get information out of the water column portion of the data that comes back, and, in using that, you can think of the multibeam echosounder as like a really wide-angled flashlight beam, or a floodlight, and we can not detect individuals with that, but we can get at the broader spatial extent of the schools, and so that's been really valuable to expand the viewpoint that we have of these fish.

I think I'll leave it at that, and so, yes, rigorous density calculations, and there are certainly ways we can take that further, and one of those ways is by using the kind of narrow flashlight beam of the split beam, in concert with that broad floodlight view that we get from the water column portion of the multibeam data.

MR. HOOKER: Great. Thank you very much.

MS. PAXTON: Sure.

MS. COOKSEY: Thank you, and I believe that Roger was up next.

MR. PUGLIESE: Thank you, Chris and Avery. It's amazing to see how far we've come, in terms of being able to take the information available and translate it into such detailed and focused information on habitat and on species distribution, et cetera. A quick question, kind of looking beyond this, to opportunities, is one of the things that, in identifying the distribution of those habitats, you also know some of the background on the pavement areas, the areas where you have those veneers, and it gets to that ephemeral nature of our habitats in the Southeast.

I know I've probably asked this question to you before, but the opportunity to take this type of information and begin to merge it with what you have of the distribution of those pavement areas, to come up with something that really actually shows you almost more of a functional habitat, where you could say, if the sand veneer is less than X inches, that, within thirty to fifty years, it will be exposed, and so then you have something beyond your core distribution of habitat that you

know, probably within that period of time, will be re-exposed and become some type of hardbottom habitat within a period time, and just thoughts on if that's something. I just look to that because of areas where this has happened, in say Gray's Reef, or really into the future, if we're seeing some of these shifts with regard to climate and current changes in our region.

MR. TAYLOR: Those are all really good points, Roger, and, oftentimes, we're lacking the mapping data in so many spaces that we have to just move on to the next space to map it, and we don't take the time to go back and resurvey, except in a couple of areas, and, like you pointed out, Gray's Reef has been mapped a number of times, and there is definitely interest in scrutinizing those data for change, especially with these low-relief habitats and the exposure and the sediment dynamics.

We have a project that we're, and it's ongoing now with the State of North Carolina, on artificial reefs, where we're surveying and re-surveying some of the artificial reefs off of our coast, and that will allow us to be able to do these sort of change detections, to look at the magnitude of sediment and the exposure of rock, potential rock, around some of these artificial structures, but also just the change in the surrounding seascape.

One of the experiences that we had, actually personally, was putting a camera down by a shipwreck very close to Cape Lookout and returning to have it be under sand by about eighteen inches and then trying to strategize how we were going to get that camera off the bottom, and we were trying to figure that we were going to have vacuum pumps and extensive commercial operations, only to return a week-and-a-half later and have it fully exposed again, and so the dynamics are intense around these capes, especially around Cape Fear, where Wilmington-East is, and so I think more -- You're right that it's a good area for research, and we need to work more closely with our geologists and sediment dynamics specialists.

MS. COOKSEY: We've got Anne up next.

MS. DEATON: Thanks, Cindy. Thank you, Chris and Avery. That was a really great presentation. I am looking at the Story Map that's on your link there, and I have seen a lot of the same images, and so, on the side-scan, it seems like the light-color yellow, the tan, is your hardest return, and that's your hardbottom, and I guess my question is, is it fair to say -- I see these bands, sort of northwest to southeast bands of these light areas, these light features, and you don't have habitat classification everywhere, but it seems like, where you do have dots on that color, they were some type of hardbottom, and they were ledge, or they were mixed.

MR. TAYLOR: In most cases, the vast quantity of seabed was made up of unconsolidated sediment in that survey area, and the side-scan return -- That's a challenge of side-scan, and it's a single variable, and it's only giving us reflectivity and intensity of that return from the seabed, and that can be caused by a couple of things, and the dynamic range of that response is sometimes not fine enough to be able to differentiate say very coarse sand from a rock return, but, in most cases, where you're seeing that northwest to southeast pattern, it's oftentimes made up of sand ridges with coarse-grain sand at the top of those ridges and then alternating with troughs that are catching the finer-grain sediments that are providing that softer return, the darker colors.

That is often how the side-scan sonar -- Side-scan sonar can do a pretty good job of guiding us towards grain size for sediments, and it's much more challenging, sometimes, to differentiate the

sort of pavement hard grounds and mixed hardbottom from those, and that's where we really call on the multibeam sonar and the backscatter.

MS. DEATON: Okay. That's helpful. Just looking at this and trying to decide, you know, if we can extrapolate, based on one thing, but it's pretty complex, and I just want to echo what Roger said about needing to really understand the value of what you classify as pavement, that low profile that gets covered and uncovered, because I have heard, many times, when reviewing permit applications, that, well, it's covered by sand a lot of the time, and so it has less value as hardbottom, and it would be nice to have more data to say, well, no, and we don't know enough about frequency, and we don't know how long is it covered before the sponges or the soft corals die, and how fast they recover, and so I think that's a big gap in our knowledge.

MR. TAYLOR: Understood, and I think we just lack an understanding of what the distribution of pavement -- I agree that it's underappreciated, and I will defer to you, as the regulators, to your assessment of the value of the habitat, the ephemeral habitats, and we'll just provide this service of collecting the data and doing the best interpretation of those data products as we can.

MS. DEATON: Thank you.

MS. COOKSEY: Thank you, guys, for that line of questioning, and I think it really highlights our need to understand those physical dynamics going on in the pavement habitats, which are still considered live bottom, hardbottom habitats by our definitions, and so that's something that I think we're going to need to get a handle on as we continue to see expansion of development in these areas, but I did want to get to Sam. He has the next question on the list.

MR. YOUNG: Just a couple of quick questions. There was a slide earlier where the map was like a lawnmower, and you left some strips that were blank, and was that intentional, or were those strips ultimately stitched together to give a complete picture of the bottom?

MR. TAYLOR: That was the challenge of connecting this very large survey, and our side-scan sonar was able to survey 100 meters on either side of the ship, which gives us wide and complete coverage of the seabed throughout that entire domain, but, as we were connecting those surveys with side-scan, and providing the over 200-meter swath of the seabed, the multibeam sonar that was providing us with the elevation information was only covering about 30 percent of the seabed at that time, and that's only because of the swath of that technology.

In order to make it 100 percent coverage, we would have to tighten that line spacing, and it would increase the effort by about fourfold, which just wasn't feasible, given the time and funding that we had available, and so, instead, we used the side-scan to give us a broader picture of where the potential hotspots were for rocky outcrops, as well as the cultural resources, and then returned to those areas to provide the 100 percent coverage with the multibeam, to be able to provide a continuous map.

We don't tend to interpolate between our multibeam coverages, because we really don't know what's there, and, instead, we just use those stripes just to provide us with more guidance on where to return to get the better coverage and the more complete coverage.

MR. YOUNG: Gotcha. I use CMOR maps, and they just finished the gray area where I live, in Stewart, and they just finished mapping that, and the update is on its way to me, and do you ever cross-reference to their technology? They are using their own boats, and their own LIDAR and another bathymetric dataset, and do you ever look to outside vendors that have already kind of mapped it to kind of correlate your mapping or match?

MR. TAYLOR: Yes, and NOAA is actively engaged in external data sources to supply and update their nautical charts, and we have pursued the same in some select areas, and, actually, CMOR has acquired some of our data, because all of it is publicly available, and so, in many cases, the large swaths that exist off of North Carolina were conducted and surveyed by us in NOAA, and we make it available through the publicly-available archives, and they take it and turn into the products that are available to the sonar machines for fishing boats, and so it's a good relationship, and we're happy to see our data get out there and available for public use.

MR. YOUNG: In terms of the wind generation, there was an article in the paper where they become fish havens, right, big structure, and would you agree with the comment that, before the wind turbines were put in and provided that structure, that those fish aren't new fish, and they're just fish that were resident, but dispersed, and now they aggregate to the bigger structure, like the turbines?

MS. PAXTON: Sam, that's a really good question, and that's something that we don't fully understand the answer to. Like Chris mentioned, we have an ongoing project with partners at the state, and one of the components of that project is to tag and track fish and try to understand their movements, but a lot remains to be understood about the connectivity and about when you place a new structure in the marine environment and where those initial fish are coming from and how that may have effects, more broadly.

MR. YOUNG: Interesting. Allegedly, I've got some experience in creating some habitats, and the fish seem to come to pretty quickly once they're there, but I don't think they're new fish. I think they're just dispersed and it's like, hey, look, and let's go there. All right. Thank you.

MS. COOKSEY: Thank you for those. Laurent, you're next.

DR. CHERUBIN: Thank you for the opportunity, and, Chris, I just want to congratulate you on your work, and that's really amazing. I can imagine all the work that goes into processing and coming up with an answer for those backscatter that you get, and, anyway, I just want to follow-up on the question that someone asked of whether the fish are basically congregating towards the new habitat or new fish are coming in.

I think, if you consider the fact that you may provide habitat where larvae can settle, then you can imagine that would play a role in basically increasing the chances of recruitment and settlement for certain species in the area, but, as Avery said, it's not something that we can answer here, but that's a possibility to consider, and so it's not only fish moving there, but it's also new recruits settling and maybe growing in the area, and so it can have several effects, positive effects, but they need to be proven anyways. That's it.

MR. TAYLOR: It's good to see you on this channel, Laurent. Thanks for the comment, and we'll look to the panel to take that one up. The attraction versus production is a debate that I try to stay clear of.

MS. COOKSEY: Very understandable, Chris. It looks like we might not have any more hands up at this point, and so thank you, Chris and Avery, again. This was a great presentation, and it obviously generated a lot of conversations, and we could very well expect some additional follow-up, but it looks like we have one more question from Paula, and I will let her go ahead.

MS. KEENER: Thank you. I'm assuming that we're getting ready to break for lunch, and I just wanted to let everyone know that the Okeanos Explorer Deep Discover is diving about 274 miles off the coast of Jacksonville, on the Blake Plateau, at a depth of about two miles, and so you can look at the live video stream by going to NOAA Ocean Exploration, and you will see how to click on Camera 1, if someone wants to do that during lunch. Thank you.

MS. COOKSEY: Great. Thank you, Paula, for sharing that. Yes, Paula is very good at telling the future, and we are right at noon, and so I was going to suggest that we break for lunch, but I do want to touch base with Brian and Casey and make sure that they are okay with waiting until after lunch to proceed with their presentation.

MR. HOOKER: Yes, and, Casey, just chat me. Will it take about thirty minutes, or what are we looking at? I am not sure of Casey's schedule. I put myself available for the whole time.

MS. COOKSEY: I suspect we'll have some really interesting discussion after your presentation as well.

MR. HOOKER: Apparently Casey is available as well, and so, if everyone wants to -- I was all ready to go, but we can hold off until after lunch.

MS. COOKSEY: Well, I don't want anyone to be hangry when we're discussing wind, and so I want to make sure that everyone has a full belly and a positive attitude as we continue on through the afternoon. Let's go ahead and break for lunch, and we will resume at 1:00 with our discussion of the BOEM offshore wind activities, leading off with a presentation from Brian and Casey, and so thank you, guys, and we'll talk to you again at 1:00.

(Whereupon, a recess was taken.)

MS. COOKSEY: Good afternoon, everyone. It's 1:00, and I see lots of Xs being populated into our attendance sheet, and so I'm guessing that people are arriving back quickly. I just wanted to verify that we've got both Brian and Casey online.

MR. REEVES: Present and accounted for.

MS. COOKSEY: Thanks, Casey.

MR. HOOKER: I'm here as well.

MS. COOKSEY: Great. We've got a lot to accomplish this afternoon, and so I do want to keep us moving along, and thanks to both of you, Brian and Casey, for being willing to stay in attendance for our afternoon session, and so I look forward to hearing about the wind activities in the South Atlantic region. Please take it away.

MR. HOOKER: Thanks, Cindy. My name, again, is Brian Hooker, and I wanted to introduce Casey Reeves. Casey is in our Project and Coordination Branch. They handle basically all the leasing out of the Office of Renewable Energy Programs, whereas the branch I'm located in is more associated with the environmental review and consultations that we do, and so, with no further ado, I am going to turn it over to Casey to kick us off on these slides.

MR. REEVES: Thanks, Brian, and thanks for having us today. We appreciate it, and it is very timely to have some discussions on current activities. I did see a lot of familiar names in the roster, and so it's nice to see everyone again, but some new folks as well who I have not had the opportunity to meet, and so I would like to, I guess, start off with the Bureau of Ocean Energy Management is housed under the Department of Interior. Our office, Renewable Energy Programs, is under the director of that bureau, and, as Brian mentioned, we are in different branches within that program office.

My role as a project coordinator is to oversee BOEM's mandate and provide informed options for our decisionmakers as we move forward with responsible development of the outer continental shelf, and so the Bureau of Ocean Energy Management -- I think the Corps has been discussed earlier this morning, but the Bureau of Ocean Energy Management is the lead federal agency for energy development on the outer continental shelf, and so it's kind of as the Corps is for other activities, BOEM is the gatekeeper as we identify and authorize leasing activities and then review projects.

Today, we'll be discussing the leasing process, the strategy, and the recent proposed sale notice, and I believe the discussion will continue on this afternoon, and it was a great discussion this morning, and I wanted to thank Avery and Chris for all of the great science and information they presented earlier this morning, and hopefully, in my presentation, you'll see the results of supplying that science.

Just to give you a little broad overview of our process, the leasing for the South Atlantic -- We're specifically going to go over Wilmington-East today. It was initiated back in around 2011, and we initiate that by Federal Register notices, and we establish intergovernmental taskforces at that time with each state, and those taskforces were made up of state governor representatives, representatives from all of the state agencies, representatives from all of the federal agencies associated with a project, given their authorities, and federally-recognized tribes.

Several times throughout the last decade, we have convened that group, but we moved forward with requesting interest pretty much off the coast of North Carolina and had a call for information and nominations, back in 2015, and so you'll see this is a long, deliberative process. We conducted several different behind-the-scenes consultations and reviews and identified areas that we would move forward with leasing at that time, back in 2018. We moved forward with Kitty Hawk and continued our consultations on Wilmington-East.

I won't read you the rest, but we're currently at the post-sale notice stage of the process, and that proposed sale notice was published on Monday in the Federal Register, and it opened up the sixty-day comment period. We'll go through these slides relatively quickly, and so, as I discussed, that call for information and nominations is a great -- Is a large landscape, regionally-based, and we continue to refine our thinking as we get more informed, and hopefully that will be evident as we continue into the proposed sale notice.

Then, within that call area, we are bound to not exceed it. We can't make it bigger once we've gone out, and we can only further refine the footprint, based on information that we get from agencies, studies that BOEM completes, studies that BOEM funds, and we start to develop conditions within that area.

Then that wind energy area is further refined, as you saw, and I think as you will see, in the current depiction of the Wilmington-East area, and it is a different shape than what Chris and Avery presented earlier, based on their data as well as information from other agencies. Just to go for the grand scheme of things, we are still within the early stages of offshore wind development for Wilmington-East.

Our overall process is four stages, and we are just getting to the conclusion of the initial planning and analysis, enabling us to potentially execute leases in the acreage that is now within Wilmington-East, and that will be followed up by site assessment plan reviews, further environmental review of those site assessment plans, which will further refine the areas that a developer could potentially locate facilities, and provide information to BOEM, where we can fill in some of the gaps that we may have had from the initial studies that we funded, identifying new items to be sited around, whether they be shipwrecks or further classifying hardbottom or other interests.

Then that is a multiyear process, typically, to conduct all those surveys and do that analysis and to provide that to BOEM and then provide that to our partner agencies, through cooperating agency agreements and reviews of concurrent permitting.

Then, with all of that information still not done, we receive a construction and operation plan from the developer and conduct an environmental impact statement at a year's future time, or at several years in the future, and that environmental impact statement also opens up a comment period and brings in new science, and so we continuously try to better the information we have, as the decisions get increasingly complex.

Just to reiterate the taskforce meetings that we've had over the last ten years, the first was in 2012, but it takes -- I think it took us about a year, or eighteen months, to get those off the ground, just the planning, and the membership roster at the last combined North Carolina/South Carolina taskforce meeting was just under 500, and we had about 280 folks in attendance, and so I won't read the dates and whatnot on this slide to you, but we also participate in as much outreach as we can, and we're grateful, again, to have this opportunity today.

Just to give you a little bit of an additional perspective on how the area has changed in size, since BOEM published its last area shape location potential for the wind energy area, we've gone back and checked-in with other agencies and come to find that the Coast Guard is currently looking at a pathway on the eastern boundary that four or five years ago was not in our perspective, and they

have shared information with us, and they are also, at this time, willing to relocate that buffer of the pathway, as we concurrently move forward with our processes, and so the current proposed sale notice did not remove these outer plots, and we have a request in the sale notice for questions that we're looking for specific stakeholder responses to, and one of them is navigation, but it is not strictly navigation related to this pathway.

We acknowledge that the pathway exists, and we also acknowledge that we need more information before making a decision on potential marine traffic for recreational fishing and commercial fishing, and there has been some discussion on whether or not a pathway -- If this lease were separated into two leases, and if a pathway to get from port to a higher-interest commercial or recreational fishing area exists, where would that exist, from which Point A to which Point B, and, if there is any information out there, we are just seeking that, as well as any other marine traffic considerations just at-large.

Since the last engagement on the wind energy area, once it was identified in the initial EA, the North Atlantic right whale critical habitat was expanded, and it then included some of northern western-most aliquots of the wind energy area, and so we are -- Brian will go into it in a little more detail later, but we have removed those aliquots out of the potential for leasing as we move forward with the proposed sale notice.

Then, finally, or, well, not finally, but just in this presentation, and I could not summarize, in ten years, all of the adjustments and considerations that we have made, but, for this current round the difference between the wind energy area and the proposed sale area, we removed a few aliquots that were of interest to the Department of Defense.

There are several Department of Defense activities that we have taken into consideration around these areas. In my eight years in the Air Force, and, in my slides, you get to see jets that I worked on, out of Shaw and the like, and so there is a -- There is aerial combat being conducted out there, low-level flights, chaff-and-flare, in proximity. They're out there, and, if you're familiar with the area, typically, you can definitely hear the sound of freedom, and so we acknowledge that, and, as our operations have changed since our last decision in 2015, we decided to modify our area.

What we're left with in the proposed sale notice that is out for public comment right now is 127,865 acres, just under 200 square miles. Nearest to shore is around about fifteen nautical miles, and a conservative estimate of 1,500 megawatts could be produced in this area, and, to give you a perspective, the Virginia lease area is 113,000 acres, but, when they got to the construction and operation plan, the proposal is for up to three gigawatts, and so double the capacity with less acreage, and so our conservative estimate is given because, as Chris and Avery discussed earlier, we don't know now what we will know in three years, when surveys and more data and information comes in, and I think it's important and responsible to expect that some of this acreage will be removed for consideration of hardbottom and for consideration of buffers around shipwrecks and for any number of things. That's why you may see some difference in numbers, but that still, at 1,500 megawatts, is I think roundabout the capacity to power half-a-million homes.

This is our overall project schedule, and my apologies for the size of the font. I know it's in the briefing materials, but just to give you a perspective on where we're at and where we're going, and the sixty-day comment period on the proposed sale notice closes on January 3, and our

intentions are to take the information we receive on the proposed sale notice and finalize a sale notice no later than March of 2022.

This is just a little bit more of an overview of what a proposed sale notice includes, and I think that we delivered the briefing materials, and then our notice published, and so that information is all available on our website, and we will certainly get folks the link to that, and I should have put the hyperlink in here, but it just published on Monday, and so we were still developing and updating that webpage then, and the proposed sale notice, in and of itself, is a Federal Register notice, but it is accompanied by additional information, and that additional information is the actual contract, or lease itself, that a participant in the auction would receive, and so therein contain conditions of mitigation and conditions to -- Operational conditions during site assessment activities.

The execution of a lease enables an entity to go out and do further reconnaissance and conduct surveys in order to complete a plan, but the conditions that they must conduct those surveys and operate their vessels and equipment, towed arrays and the like, and seasonal restrictions are all included in that lease that accompanies the proposed sale notice.

It also identifies the proposed sale area and the proposed auction methodology, and we have also asked if there is a -- From industry and stakeholders, if there is an equitable delineation that should be considered, and this is largely on BOEM's history and our experience, but also with the State of North Carolina's request for potentially making this lease area, or the proposed sale area, into two or three lease areas.

We have seen, just in Kitty Hawk itself, I think just under 120,000 acres, and the initial construction and operation plan, the initial surveys in development, only totaled about 45 percent of that whole lease area, and so there is the potential for, we think, for two leases, but, if we do separate this into two leases, what we're looking for is if there are items that are of interest to developers and other stakeholders in how that delineation should occur. I think this goes to Brian.

MR. HOOKER: I will take over here, and thanks, Casey, for that overview of the leasing process, and I will kind of recap a little bit, in this slide, the history, and so, as I think Casey was saying, we -- As you saw from the report that Chris and Avery reported this morning, that report was finished in 2016, because that's when we were last really analyzing these areas, what is now the Kitty Hawk area and Wilmington-East, and Wilmington-West as well.

At the time, we only moved forward with leasing Kitty Hawk, and we have issued the lease, and now we're looking at construction and operations plans for Kitty Hawk, as Pace indicated earlier this morning, and he's looking forward to those EFH assessments for that area, or EFH assessment, singular, hopefully.

At the time, I think a lot was determined by was there enough demand for leasing more areas, and, at the time, it was determined that the Kitty Hawk area was sufficient to meet that existing demand. Since then, North Carolina has taken additional steps to want to procure offshore wind energy, to meet its state energy goals, and so that's the reason why we're now kind of back at the table and trying to provide more area to meet the State of North Carolina's offshore wind energy demands.

As we mentioned, the last EA was done in 2015, and so we needed to kind of refresh that, and so, somewhat recently, we published -- We determined that we needed to supplement that EA, because

there has been, as Casey very carefully went through, some additional information that we want to make sure that we consider in the environmental assessment, and, again, I will stress that, at this point, BOEM only does an environmental assessment for basically the issuance of a lease and then activities that may directly occur as a result of issuing a lease, such as additional surveys of the area, and we also cover the activities that may occur under a site assessment plan.

A site assessment plan, on the Atlantic thus far, has really only included the use of floating LIDAR buoys, and that's depicted in the slide here. Early on in the program, it was anticipated that there would be meteorological towers actually placed on the seabed, but these floating LIDAR buoys are much cheaper and meet the needs of determining the wind speed at hub height for that. That's all that the EA and the supplemental EA will cover, is that federal action of issuing the lease and site assessment and site characterization activities.

The actual construction of a facility will occur at the time we receive a construction and operations plan, and so, again, Casey kind of went through everything that the proposed sale notice is asking the public to comment on, but we also did ask the public, in a separate notice, to comment on the information to include in our environmental assessment.

This is, again, what I was just stating, that we did issue a notice to stakeholders on the draft supplemental assessment, and we're -- The supplemental assessment will evaluate the 2015 EA and the finding of no significant impact that we found there and making sure that we are bringing everything up-to-date.

During the 2015 environmental assessment, we did consult under ESA, and that one was getting a little stale, but it basically covered activities all the way through 2020, but we did reinitiate kind of more of a coast-wide biological assessment for all site assessment and site characterization surveys in the Atlantic, including these areas that recently we received -- That was informal, and so there was not a biological opinion, but, instead, we got a letter of concurrence from the Greater Atlantic Regional Office, but it was done in concert with the Southeast Regional Office.

Just, again, and I guess maybe to go back, and one thing that I didn't mention, in light of what Pace was describing this morning, we also do -- We'll look at the essential fish habitat consultation and determine if what we need to do in that area -- I would have to go back and double-check, but I think, at the time, back in 2015, I don't believe, and I don't know if Cindy will correct me, but there were specific comments received by the Southeast Regional Office, but what we've always done is, when we actually get a site assessment plan, we give that site assessment plan to NMFS, to say, hey, this is actually where they're planning to put the buoy, and here's what the conditions are at the site that they want to put the buoy, and so we generally conclude the EFH consultation at that time, to say that the range of effects that we analyzed in the EA and the EFH assessment are what we anticipated from the placement of the buoy. It's done on a slightly programmatic level, but then, once we actually get a site assessment plan, we kind of do a determination that they're totally consistent or not with our EFH assessment.

Then just some things to note on the proposed sale notice itself, and there are some things that we are specifically seeking comments on, and that includes project labor agreements, commercial fishing engagement, and we do have a -- Basically, for several leases now, we always have a fisheries communication plan, and then being more specific about the elements to include in a fisheries communication plan, and then also tribal nations consultations and auction and leasing

procedures, and those are all included in what we asked for in the PSN. However, you can also comment on the PSN in areas that you think should not be considered for leasing, for environmental considerations as well. Casey, I will turn it back over to you, I believe, or is this still me?

MR. REEVES: This is the last slide, I believe.

MR. HOOKER: Okay, and so I guess the star there is where we are in the process, and the final revised supplemental EA will support any final sale notice that comes out. Do you want to cover that quickly, Casey?

MR. REEVES: I think, just to reiterate, those who have been involved with the process, maybe to just provide some clarity on the changes that have been made to the proposed sale notice since our July 21 taskforce meeting, and it may not be -- I can say, I guess directly, that we are continuing to assimilate the decision to be made, the information to make the decisions, and so we had a taskforce meeting in July, and we asked for comments from our taskforce members in North and South Carolina.

Those comments were combined with the comments that were received on the supplemental EA that was published back in August and request for comments on that document. Now, further, we have a third comment period, and we've had some overlap on those three, for the next sixty days.

These comments will be combined with the commentary both from 2015 and 2016, but with the new outreach and information, and follow-up meetings that we've had directly with agencies outside of that taskforce meeting, and so, if you've commented on or are aware of comments that were submitted to BOEM on the supplemental EA, but you're not seeing them reflected in the PSN, the intention is to combine all of those comment periods into one formal decision package prior to the final sale notice in March. I just wanted to make sure that, if you are aware, if your agencies are reading the PSN, and say why did this not include a particular mitigation or address a comment, that is why. Thanks, Brian. I think we'll open up for questions.

MR. HOOKER: I did neglect to mention that in the briefing book are the comments submitted by the National Marine Fisheries Service on what to include in the supplemental EA, and so that is included in your briefing book.

MS. COOKSEY: Okay. Well, thank you both for that. Let's go ahead and open up for comments and discussion. I know that I appreciated you guys outlining the iterative nature of the process and how working from the call area to the wind energy area to the lease areas, and how that's almost like an adaptive management approach as you move through it. I am shocked that there are no questions.

MR. HOOKER: I think that this AP has just gotten tired of hearing us talk, and we've been talking about this area since before 2015, and so it's like, what, it hasn't been leased yet?

MS. COOKSEY: It's a process.

MR. HOOKER: It is indeed, and maybe everybody has still got their lunch coma going on.

MS. COOKSEY: Right. I was going to say that everyone is just too tired. Sorry, Brian, that I might have implied that you weren't on the panel. I was just in my happy mode.

MR. REEVES: One of our intentions in getting to be able to present here is to at least provide some exposure and contact information as well, and so we are -- As decisions are made, and they're big decisions, and it takes some thoughtful consideration of before comments are made, and so we are certainly aware of that, and, if, after the fact, someone has a question, feel free to pick up the phone.

MS. COOKSEY: Okay. Thank you.

MR. HOOKER: I did forget to mention too, I guess in all the haste, that -- Roger or Cindy, I think we add to the briefing book that the actual proposed sale notice published just on Monday, and so we had -- I don't think we actually got that into the briefing book yet, but the actual proposed sale notice published on Monday.

MS. COOKSEY: Hot off the presses.

MR. HOOKER: Yes, indeed. You guys are the first that we've had to talk to since it published.

MS. COOKSEY: Well, I want to give Roger a chance to ask his question, and then I have another topic that I would like to cover. Go ahead, Roger.

MR. PUGLIESE: Thanks. We'll get that out and get a copy out. If you can forward it to me, I will send it out to the group ASAP. What I was going to touch on, Brian, was that hopefully -- Something else is that, through building the Kitty Hawk offshore wind area, it will be similar used in as you proceed further down the road, because there was fairly extensive input on fisheries, and one of the focus slides talking about the notice and focusing some and highlighting some of the commercial in our region.

As you know, the recreational fishing operations, and everything from private rental to charter and headboat operations, are important to include and understand how it may impact some of those different areas, and so it was -- The effort that was done to address Kitty Hawk was excellent and provided a lot of iteration to refining that area to address any of the concerns relative to habitat, relative to fisheries, relative to all the other partners, and hopefully some of those different types of analysis and different coordination are also continued -- It looks like it's all embedded in that timeframe, but I just thought that that was a good example to provide next steps on other things as they come down the line on the South Atlantic.

MS. COOKSEY: Thank you, Roger. It looks like David is up with a question.

MR. WHITAKER: Thank you. Thank you for that presentation. I was just looking here that the White House is pushing for thirty megawatts by 2030, and has BOEM gotten any instruction on how to streamline the process some to reach that goal, or is that even feasible?

MR. HOOKER: I mean, I think, in the briefing material, I believe I included what BOEM's long-term goal is. I think, in the briefing material, there is an announcement by Secretary Deb Haaland, and, in that, she outlines what areas are going to kind of move forward to help meet that. There's

a link to it, and I think that's seven new offshore lease areas by 2025, and that includes this area off of -- Well, in don't want to call it Long Bay, because I don't feel like it's anywhere near Long Bay, but the Wilmington-East call area.

As far as regulatory processes to streamline, I think we're always looking for efficiencies. Obviously, one of the -- What Casey kind of went through, and there's the whole leasing process and the timeline that's associated with the leasing process, and that's fairly well set. Then there is -- Once we actually lease it and get a construction and operations plan, the timing of when we receive that construction and operations plan is totally up to the market and the lessees' submission of when that occurs, but what we are primarily, I think, focused on right now is in areas where we've already leased, and we already have construction and operations plans in-hand, and that's how do we improve the efficiency of the environmental review, once we actually have a construction and operations plan.

That is, I think, where we usually look to gain efficiencies and really work on our streamlining, is developing consistent processes, consistent criteria, in our analysis of each and every one of those construction and operations plans. Casey, did you want to add any more on streamlining?

MR. REEVES: We are currently piloting an interagency agreement with the Army Corps of Engineers, and the intent of that agreement, just from a local perspective, is to enable BOEM to leverage the resources of the Army Corps and assist us in reviewing the construction and operations plan for the Kitty Hawk lease area, as well as the Virginia lease area, and so I think we're realizing that efficiency is going to need to be born out of more bodies and more scientists and more engineers being available to do that, because our office, in the Renewable Energy Programs, sits at about -- I think we're just over fifty people, and the Corps of Engineers district, the division that we brought on, their capacity, or personnel, is about 10,000, and so we hope that is going to help.

MS. COOKSEY: Thank you, guys, for that. From the NOAA end, when it comes to efficiencies for the consultation route, we've been working on using programmatic consultations, wherever possible, to also streamline this process with BOEM and with the Army Corps of Engineers, and so the point that I was going to bring up has already been brought up, which was the October 13 announcement from the Secretary of the Interior, and you answered one of my questions, which was is Wilmington-East considered one of those seven areas that they are considering, and I have seen the call area go out for the Mid-Atlantic region, and are there any other potential areas in the South Atlantic that you know of that may be coming down the road?

MR. REEVES: Right now, there is an Executive Order which institutes a moratorium on new leasing areas south of the Virginia/North Carolina state line after July 1, 2022. That being said, it's a ten-year moratorium, but BOEM continues to conduct planning and analysis for new areas, even in the areas where the moratorium is in place, because, as this proposed sale notice is evidence to, it took us a decade to get here. It's a legitimately long process, and a thoughtful process, and so I think that the call area does include portions of the South Atlantic, but, with the Executive Order that is currently set to go in place in July of next year, we could only plan and identify new areas, and we could not execute a lease until July 1, 2032.

MR. HOOKER: So there is nothing else beyond. In that plan that Secretary Haaland put out, the only new leasing that is identified there is New York Bight, Carolina Long Bay, which is

Wilmington-East, northern and central California, Gulf of Mexico, central Atlantic, which is mostly north of Kitty Hawk, Oregon, and the Gulf of Maine. That is the extent of it through 2030.

MS. COOKSEY: Okay. Well, great. Thank you, and it does not appear that we have any hands that have come up, and so I believe we are ready to move on to the next topic, which is going over the revisions to the beach nourishment policy. This has been contained in the briefing documents, the work that myself, with the sub-committee members, have worked on since the spring meeting, which was to begin the process of revising this policy. I guess the goal of the next couple of hours that we're going to go through is to go through this and provide an opportunity for the broader panel members to provide input on the policy, discuss where we want the policy to go, and then next steps for the policy.

When we started this process with the sub-committee, there was an idea of a few overarching goals that we wanted to bring to the table as we looked at this, and we wanted to ensure that our policy is addressing emergent threats as kind of the state of the art of beach nourishment, beach dredge and fill, has changed since the original policy was drafted in 2013.

We wanted to ensure that the policy reflects the latest science that has occurred since 2013. We also hope to identify any gaps in our scientific knowledge related to beach dredge and fill and also just trying to ensure that we are making sure that we can make this document as consumable as possible for the communities that we are targeting with this.

One of the big changes that we kind of started out with is moving from the terminology of dredge and fill to beach renourishment, or nourishment, as the language, and I feel like, within the document, we tried to acknowledge that, yes, beach renourishment is dredge and fill, but it's -- We wanted to use language that would be recognizable by the communities that are engaging in these activities, as well as what is the common regulatory language, and so I guess we could open it up initially, to see if there are any comments about that pretty large-scale change in the document. We've got Wilson.

DR. LANEY: Thank you, Madam Chair. To be totally transparent, I haven't totally finished reading the document, but what I've read so far sounds really good. I just had a couple of very minor comments thus far, and one of them being that I think it would be good to stress, and I think it's touched upon, but one place I suggest that adding the word "repetitive" in there, because a lot of the projects now are being repeated at very short intervals, at least short intervals for ecological purposes.

Then, in addition, and this is on page 2, the first paragraph, and the last sentence reads: "Less emphasis has been placed on the hundreds of other species affected, many with direct and significant fishery value", but I suggest that we also may want to add "fishery and/or ecosystem services value", since there are values associated other than fishery values.

Then, in the next paragraph, there is that euphemistic term "borrow areas" again, and so I would suggest we replace that with sandmining areas, because that's what they are, and they are not putting it back. They're not just borrowing it temporarily. They are permanently removing it, and then I think I had one more. Again, it's a minor editorial thing, but, on page 4, down at the bottom, "hydrogen sulfide", and my spellcheck flagged the spelling of "sulfide", but I will defer to whatever the dictionary says on that.

Then I did have a question for you or Pace, either one. In Number 11, where it documents movement of deposited sediment away from the initial fill sites, especially onto hardbottom, I didn't look up any of those references, but do those -- Do you know, Cindy, if those capture the whole Port of Miami incident, where the Corps wound up covering a fair amount of coral? I didn't know whether that had been documented in a reference or whether that was one of the ones that you have cited or not. With that, I think I will stop, because I need to finish reading the rest of the policy. A lot of it is citations, but, in general, it seemed to me that the rewrite is doing a very good job on it. Thank you.

MS. COOKSEY: Well, interestingly, before I get to your question, I am realizing that the PDF version that we're showing here is not the latest version that I had that incorporated some last-minute edits, and so somehow there was a difference between the Word doc and the Google doc, and so let me -- If we can bring up the Word doc, that might be the better document that shows the latest edits.

DR. LANEY: I was using the Word document, Cindy, for my comments, and so I don't know whether -- I didn't look at the screen, and I switched over to the Word document, to give you those comments and that one question.

MS. COOKSEY: Right, because I was just looking at the document on the screen, and it's -- The most recent document edits had ten threats to marine and estuarine resources. Let me -- This could have been from going from Google docs to Word docs. If you can scroll down, Roger or Myra, and I'm not sure who is in charge, and let's see. The quickest way is to see if we have ten or if we have sixteen. Okay, and that's still the old version. Roger, what's the best way to deal with this? Do you want me to quickly email you?

MR. PUGLIESE: Yes. Go ahead and send it, because this is based on the version, the Word version, and it's just transferred into this format, and so why don't you just send that, and I will post that as soon as I get it.

MS. COOKSEY: Everyone knows the joy of trying to implement new technology, and we were trying to do most of the work on a Google drive, a Google doc, shared and then the struggles of people accessing that and trying to create copies of it.

MS. DEATON: While you're waiting, you can take my hand away, and I was just going to -- I had just noticed that like Lindeman and Snyder wasn't there, and so this one has the --

MS. COOKSEY: Right, and the one that's up now has all of Anne's edits in it, and so this should be the one that we're looking at, and so Anne and I had some discussions about nourishment versus renourishment, and that gets back to Wilson's comment about sandmining versus borrow area, sandmining area versus borrow area, and I agree with Wilson that what it is is it's sandmining, and it's dredging, and we're putting nice euphemisms on it, and a borrow area makes everyone pretend to feel good that it's going to fill back in and return to normal, and we do not see that at the vast majority of habitats, that they don't return to normal, and it's a long-term, permanent change.

That said, we are trying to bring it into -- I think that it's a good idea, if we want the community that's actually permitting and conducting this work -- To put it into a language that is understandable by them, that that is the advantage of that.

MR. HOOKER: I just took a quick look, and it was only used three times in the document, and the other ten are references, and so it is a common term, and, obviously, I work for BOEM, and it's used by BOEM and the Corps of Engineers quite regularly, but, I mean, I do understand the concerns in using it, but, again, it only appears three times, I think, in the policy, and the rest is just in the references.

MS. DEATON: Yes, and that's the name that you always see with the application, with the documents to review, and so maybe, in the very beginning, you could have like "(borrow areas)".

MR. HOOKER: I think that makes -- Actually, in one case, I think it does try to clarify what is meant by "borrow areas".

MS. COOKSEY: Right, and so, if we go through this, this document establishes the policies of the council regarding the protection of essential fish habitats and HAPCs impacted by beach nourishment (dredge and fill activities) and related large-scale coastal engineering projects (beach scraping), and so, I mean, right from the beginning, we are trying to -- I was trying to find that balance between the language that the agencies use and the reality of what is occurring. Rene.

DR. BAUMSTARK: I was actually going to comment on that same thing and make a suggestion, but, all in all, I feel that the -- After just a glance over it, it looks good and acceptable, and it's well written and put together, and, yes, the "borrow area" is a common term, and the vernacular for folks who do this -- I would be concerned that it would raise some confusion, and so is this policy -- Is this policy paper the right place to try and redefine a term? Probably not.

Yes, it certainly is a euphemism, and so I would suggest, and you've already talked about it a little bit, but I would have suggested something along the lines of adding the word "mining". I looked it up too, and I didn't realize how many times it was actually just a reference, and so it's only a few times as part of the prose, the text itself, and maybe it's not that big of a deal to make sure we say "mining" from what is called "borrow areas", or something along those lines, but I wouldn't want to create more confusion as to what is being referenced, because that is such a commonly-used term.

MS. COOKSEY: So potentially adding in "mining from borrow areas", as a way of helping be more descriptive of the action?

DR. BAUMSTARK: Something along those lines, and there was another suggestion earlier that I think got at putting "borrow areas" in parentheses would also, I think, work, and if we can describe what the borrow areas are really doing somewhere, and I don't know that the policy paper does that, and that would get, I think, at what Wilson is suggesting.

MS. COOKSEY: So add some more language around the borrow areas, highlighting that they are for sandmining.

DR. BAUMSTARK: Yes, and I think that would get us there.

MS. COOKSEY: Okay. We have our typical language, and it's not intended to supersede any applicable state or federal regulations, and the findings presented below assess the threats to EFH potentially posed by activities related to large-scale dredging and disposal of sediments in the coastal ocean and adjacent habitats and the processes whereby those resources are placed at risk.

I really like that sentence, and that's a sentence that remained unchanged from the document that Priscilla originally drafted, and, again, it's trying to find that balance between the common terminology of beach nourishment and borrow areas and the reality of what's actually occurring when the work is happening. Wilson.

DR. LANEY: Just because something is commonly used, it doesn't make it right, and I am good with -- I understand trying to use terminology that people understand, and maybe the best way to approach it would be to put a -- I think it was Anne or somebody, Anne or Rene, who said maybe if we put it right upfront and just say, hey, we're going to use the common term of "borrow area" in this report, but what we want you all in the public to understand is what you're really talking about is a sand mine, because that's what it is. It's mining. It's not borrowing, because you never put it back. Thanks.

MS. COOKSEY: I think we'll definitely be able to add a little clarifying language to that, and so then we go on to identifying EFH at risk from beach nourishment, and this was where we really focused on trying to bring in some information on the emergent threats, as well as trying to bring in some of the latest science, where possible, and just also consolidating some of the information, to make it a little bit more readable, again, by the community that we're trying to get this information out to.

Number 1, the South Atlantic Fishery Management Council finds that, in general, frequent and widespread beach nourishment projects (dredge and fill) occurring in the U.S. Southeast together constitute a real and significant threat to EFH under the jurisdiction of the council. Coastal communities are strongly encouraged to evaluate the full range of alternatives to these types of projects when addressing erosion and sea-level rise. I see that Sam wanted to jump in.

MR. YOUNG: Yes, and I was on the -- Actually, I was appointed to the Collier County Resiliency Committee, and, obviously, beach renourishment was an ongoing project and process, and it all depends on, geographically anyway, what the local county government is going to do for beach renourishment, and I think it falls under most counties, versus in the cities, and they don't know where the sand goes, and they can't access it unless it's at great expense, because it's moved so far away, and so I know, in Collier, they were actually grinding it and sending it from limestone quarries and then trucking it in and dropping it on the beach.

Is that best practice? I'm not sure, but this committee was never part of the equation, or the discussion, at the county level, at least in Collier, or any documentation otherwise, and so I'm just curious how what we're talking about now translates down the chain to cities and counties, et cetera, in the south, whether it's Florida or North Carolina.

MS. COOKSEY: I will have a first go at this, Sam, although I know there are other members of the panel that deal with this issue that can certainly jump in and clarify, where possible. All of

those local communities, if it's a city, and I have dealt with homeowners' associations. Any of those smaller communities that are seeking beach renourishment activity have to receive a permit.

MR. YOUNG: Right.

MS. COOKSEY: It's usually a joint permit from a state agency as well as the U.S. Army Corps of Engineers, because of the nature of dredge and fill. Once there is a federal nexus, which, in this case, would be the U.S. Army Corps of Engineers permit, it brings into play all of the consultation requirements of, in my case, the Magnuson-Stevens Fisheries Act.

This policy that the council may produce at the end of our efforts is a policy that I then bring forth to the Army Corps of Engineers, and it helps to bolster the consultation process, and one of the big changes that I made in this document was towards the end, and I converted what was a section talking about policies to minimize the adverse impacts of beach renourishment and turning that into the language that is more commonly used in the permitting process, which was best management practices, so that we can try to use this document to influence that process.

Then I am also hoping, kind of at the end of this, we can gather up, from the panel, ideas that we really consider important for addressing research needs, so that we can continue to try to understand the cumulative impacts to our coastal systems, and so one of the things, and I guess maybe Roger could help us figure this out, is we -- On the Google drive, we actually had a large literature folder, to try to bring together all of this information, and it's where the majority of these papers that are in this policy are at, and it might be very useful to try to share that with the other panelists at some point as well, to help people understand these issues, but I invite anybody else who is engaged in the regulatory process to highlight how this policy would affect it.

MR. YOUNG: I guess my point is that what's going on at the county level, where I came from, is not necessarily in concert with what I have been reading so far, and what I haven't seen at the bottom that you incorporated, nor any direction to go look at any link from this committee, or NOAA in particular, and I know that the county worked with the Army Corps to get permits, but that was pretty well planned out, as to when and how much and so forth, and they have one guy that was in charge of it, and he was really good, but I, like you, am concerned about what that does to whether it's turtles or whether it's the fish population, and it will have a consequence.

MS. COOKSEY: I know that Florida has dealt with a lack of sand resources that they can use for what we would typically consider the dredge-and-fill operations.

MR. YOUNG: Right.

MS. COOKSEY: Rene, I don't know if there's anything -- This is actually something that Anne brought up, that we would like to see, if possible, some more papers to reference from Florida and to make sure that we've brought in the Florida perspective into this, because this is all really based off of North Carolina, South Carolina, and Georgia.

MR. YOUNG: Yes, and, on the west coast of Florida, the sand is like powder, and so they get pretty picky about what sieve it will make through to be suitable for trucking and dumping onto the existing beach in a dump truck, because dredging isn't a viable or economically-feasible option.

MS. COOKSEY: Rene.

DR. BAUMSTARK: Just to be clear, because this is not my area of expertise, but I have a colleague at DEP who I would ask to help, and so you're suggesting that we add some Florida perspective to this policy document, and maybe even some references, just to give it a little more of the whole east coast coverage, and is that correct?

MS. COOKSEY: Yes.

DR. BAUMSTARK: Sure. Absolutely, and what would a timeline be? I'm not sure when this is slated to move forward. Do we have one?

MS. COOKSEY: We do and we don't. Coming out of the April meeting, we had set up the sub-committee to work on revising the draft, which is what we have kind of in front of us as our first iteration of this to present to the panel and get feedback from the panel. We do need to decide whether or not we want to complete the revisions by creating edits to this document and sending it out to the panel and going back and forth like that or if we would like to continue to work on the document and then revisit it again at our next spring meeting of 2022. Roger, I know we had talked about the fact that this would -- The earliest it could go to the council was at their -- Was it their March meeting?

MR. PUGLIESE: Yes, and we do not have a Habitat and Ecosystem Committee at the December meeting. We are planning on having a council meeting potentially to address specifically the habitat blueprint in the winter, the February timeframe, potentially, but, with regard to the formal committee, most likely this would come back for the March council meeting, depending on the actions of the advisory panel. That would come with the report that comes out of this meeting, or whenever this panel would complete it, but that's the earliest timeframe right now.

MR. YOUNG: Since it would have to get the Army Corps approval --

MS. COOKSEY: No.

MR. YOUNG: No?

MS. COOKSEY: No, and this is the council's policy. My point was that, once the council has a policy that they establish, those of us in the consulting community can use it in our consultations with the Corps, and the Corps has no say in this.

MR. YOUNG: Okay. I was just trying to think of a speed lane to get it to the key personnel at especially the county level along the coastline, both coastlines, of Florida, frankly.

MR. PUGLIESE: The mechanism --

MR. YOUNG: Just with here's what we want to do, and just shoot it off to the Army Corps, and they get the green light, and it occurs during typically the summer months, when turtles aren't nesting, but it does add a lot of volume, square footage, to a beach that's been eroded, or a pass that's been closed.

MR. PUGLIESE: I would just jump in, and one of the things that will happen after -- This is a draft for council consideration, and the council will review and modify and potentially approve this as the revised policy, and the follow-up is going to be both a presentation on our site through the habitat and ecosystem pages and the ecosystem sections, but, also, one of the last things we did is we did a pretty extensive distribution of the policy to what we call ecosystem partners. Hopefully what we can do is make sure that that notification of its availability covers all those different aspects, to ensure that it's getting in the right hands, and so that's one thing that can happen after the policy goes through the council process and approval and then is available.

MS. COOKSEY: I think one thing that I would like to get folks' input on, because this was something that I considered adding to this first point and chickened out of, which is, as we discussed, evaluate the full range of alternatives, and do we include retreat in that recommendation for consideration, or do we just leave it open and the full range of alternatives?

MS. COOKSEY: Wilson.

DR. LANEY: Thank you, Madam Chair. I would say yes. I mean, it's not going to be probably very popular, or well received, but, in fact, it is occurring along the east coast, and certainly there are places in North Carolina where retreat -- It may not be -- What's the word that I want? It may not be totally incorporated into local policies, but it is in fact taking place, and there is the very well-known home in Rodanthe that was used in the movie, whose name that I can't remember, that has already been moved at least once, and who knows, maybe moved again, and so I would say certainly mention it, even though I think, when you say "full range of alternatives", some of us would acknowledge that retreat is certainly within that full range, but it doesn't hurt to say it in black and white.

MS. COOKSEY: Right, and that was kind of why I was considering adding it in, because, too often, in the discussions, when you talk about have you fully considered all of the alternatives, retreat is rarely, if ever, part of that discussion.

MR. YOUNG: What is retreat?

MS. COOKSEY: It can be any number of different techniques, but it tends to involve relocating homes, in order to allow the natural processes of the ocean and sea level rise to occur.

MR. YOUNG: So, when you say retreat, it would be to not add to the shoreline, but move structures that are close to it further away?

MS. COOKSEY: Yes.

MR. YOUNG: Okay. I misunderstood. When you said retreat, I thought it was like let's just back away from this whole thing.

MS. COOKSEY: No. Have the structures back away.

MR. YOUNG: Okay, and so now I understand what you mean by retreat, which is problematic when it comes to twenty-five or thirty-story condos.

MS. COOKSEY: Anne.

MS. DEATON: Thank you. I was just going to comment that it was at one of our previous meetings, and I think it was Steve Ross that said that he specifically thought that we needed to update this policy, because we have a lot of new information about sea level rise, and he brought up the retreat part should be reconsidered now as an option, and then I just sent everybody an email of a paper that was done in North Carolina that looked at -- It weighed the cost of continual renourishment and other efforts versus retreat, and it's like an economics paper, but it puts a dollar -- It found that it was, I think, more economically-viable to retreat, in that area, but I think, as Sam mentioned, if you're in a highly-developed area, with high rises, that's a different story, but I think it should be included as an option.

MS. COOKSEY: Okay. Thank you. Brian.

MR. HOOKER: Thanks. I think the way it's written, currently, is correct. Coastal communities are strongly encouraged to evaluate the full range of alternatives, and I agree. The coastal communities themselves are the ones that need to evaluate if shoreline retreat is a viable alternative, and I think, in many cases, it could be good policy. However, in the context that I'm hearing it discussed, it's -- By the time it gets to the Corps of Engineers as a proposal, that's no different than the no action, and so, if we're actually talking about in the EA or EFH assessment context, that is the no action alternative, and there isn't -- The Corps isn't going to be evaluating shoreline retreat in an EFH assessment or environmental assessment.

If the purpose of this policy is to advise NMFS, in perhaps pre-application discussions with the coastal community, I think we need to strengthen the way that that's written, because, again, I think it's written correctly that it's the coastal community, and it doesn't say like the Corps of Engineers should in an EFH assessment or an EA, but I just wanted to make clear that that's where the conversation needs to occur. By the time it gets to the EFH assessment, the proposed action is already -- It's either renourish the beach or don't do the action, and so I just wanted to -- I don't know if that needs to be clarified here, and, again, what is the purpose of this policy?

Usually, it's to advise the National Marine Fisheries Service as they're doing their EFH assessments on what to include, but I want to make clear that at least my take is that this is kind of like a pre-application type of policy that the council should be doing more outreach on, or I don't know, and it's kind of prior to an actual EFH assessment that is hitting the NMFS desk, and does that make sense, Cindy?

MS. COOKSEY: Absolutely, and, when I talk about getting this to the Corps, it's because it's oftentimes, once I've made a policy apparent to the Corps, the Corps, when they are initially in discussion with applicants, they will make the applicants aware of the policy during the pre-application phases that we go through, and then I can also ensure that I get it out to the consultant community as well, but, also, keeping in mind that there are also nourishments that are going on because those are federal actions as well, in certain areas, where it's the Corps themselves are the ones conducting the action on certain beach systems, and so it can also directly apply to them, but, no, I agree that it's important to get it to the communities as these decisions are being made. I see Sam is up next, and, Sam, I just wanted to clarify -- You had mentioned the west coast, and our activities in the council, we're focused on the east coast of Florida.

MR. YOUNG: I understand that distinction, but, with the exception of Martin County, it's pretty much condo canyons up and down the coast, and they're not going to move them, and so it will be just the same old same old of whether it's trucked in or dredged in, and they're going to continue doing it, and it's a given. It always erodes, and they always replace, and it's just a cycle that keeps repeating itself at X amount of money.

MS. COOKSEY: Okay, and so do we have -- I don't see any other hands right now for Point 1. Point 2, and I think this brings us back to Wilson's earlier comments about wanting to highlight the repetitive nature of this, which, for me, is also the cumulative, and so we've got the cumulative adverse effects of these projects, especially in relation to increasing frequency of activity, change in season of activity, and recovery from these activities, have not been adequately assessed, including impacts on public trust marine and estuarine resources, state and federally-protected species, and South Atlantic Fishery Management Council designated EFH and EFH-HAPCs. Long-term geoengineering of the southeastern coastline is being conducted without review of the collective consequence of these activities. Any thoughts or comments or suggestions?

MR. YOUNG: I don't know if there's been much study done on where -- If they're going to dredge and fill, and they're going to dredge from someplace offshore, I don't know that there's anything other than, yes, there's sand over here, but have they -- There has been no measure given to the marine populations, whether it be a mollusk or a fish, that would be affected by the removal of that sand, or at least not that I have witnessed, both sitting on the county committee or city council. It's just like a land grab underwater.

MS. COOKSEY: Sam, I actually think you're bringing a really valuable perspective to me, because part of it is coming at it from my experience on the science end, and I see all kinds of research that has been done on individual projects that certainly have limitations, and that we've cited here, that have noted the adverse impacts associated with these activities, but what I am really hearing is that, from your experience of actually being on these local community groups, there is no discussion of those activities.

MR. YOUNG: None. Zero. It's just which beach, how much, and what.

MS. COOKSEY: Right, and so absolutely no consideration for those cumulative effects, especially from these repetitive actions.

MR. YOUNG: No.

MS. COOKSEY: That's something for us to consider, is how do we get a better message out regarding these adverse effects, but we're looking at them as a given.

MR. YOUNG: To mitigate how frequently it's getting lost, and, I mean, is there a way to stop that erosion from occurring as frequently as it does, because, without it -- If you just are looking at the county that I came from, I mean, there is beach renourishment projects year-in-and-year-out, up and down Collier and Lee Counties, just like automatic. Like I said, it's a cycle that just keeps repeating itself with the tax, and we're paying for it, because, guess what, they want to go to the beach, and so the money is not even an issue, and it's not that expensive, but it is a land grab of underwater habitat to put back up onto dry land, and maybe more, I don't know, berms or rock --

Big limestone rock berms would prevent some of the erosion, or at least mitigate some of the erosion, cycles and lengthen it, but it's pretty systematic in the areas that I was participating in on the local and county level.

MS. COOKSEY: Right, and so we, in this committee, are not going to be able to stop sea level rise.

MR. YOUNG: No.

MS. COOKSEY: So does anyone else want to jump in? I am not seeing any hands, but I want to make sure that we give the opportunity to the entire panel to participate in these discussions. Steve.

MR. MILLER: I live in St. Augustine, Florida, and we are constantly -- That beach is constantly being dredged, whether it's to protect houses in Ponte Vedra or to protect the beaches both north and south of St. Augustine Inlet. There seems to be a tremendous amount of sand movement towards Matanzas Inlet, and, over the years, I have just slowly seen this inlet filling in, but the only discussion -- We do monitor the success of our beach filling projects, simply as -- The metric is how many cars can we park on it. Other than that, you find really no environmental assessments, and this beach is being renourished constantly.

MS. COOKSEY: I mean, I think this speaks to the need for us to try to address this. I mean, when we're hearing from folks speaking from their own communities and talking about the constant nature of these renourishment activities, and we know that they are resulting in adverse effects, and so that's why I think we're trying to address this and revise this policy and try to get it out there, to see if it can help. Any other comments on Point Number 2?

I am not seeing any hands, and so Number 3 is while some environmental research studies have been completed for select beach renourishment activities in the Southeast, these have often been limited by small sample size, short duration, or inconsistent sample design. Cough, cough, Stacie Crowe. Historically, emphasis has been placed on the logistics of dredging and economics, with environmental considerations dominated by compliance with the Endangered Species Act for sea turtles, piping plovers, and other listed organisms. Less emphasis has been placed on the hundreds of other species affected, many with direct and significant fishery value. Steve, I see your name is up.

MR. MILLER: I didn't have anything. I thought my hand was down.

MS. COOKSEY: Okay. Wilson.

DR. LANEY: Thank you, Cindy, and so this is where I was suggesting that we may wish to add the words, in that last sentence, where it says, "many with direct and significant fishery value", and that is certainly true, but we might want to add in the words "many with direct and significant fishery and ecosystem services value", or something along those lines.

MS. COOKSEY: I think that's a great addition, Wilson, and I'm making notes, so that I can make a lot of the comments and edits that folks are suggesting, and, Sam, I see that you are on the list.

MR. YOUNG: Well, I was just looking at the second sentence, and you say "historically", and I would replace "historically" with "as of to date" and considerations made by --

MS. COOKSEY: Good point.

MR. YOUNG: The emphasis has been placed on logistics and the economics, first and foremost. Environmental, not so much, and they are respectful of the timing, based on our sea turtles have gotten a lot of attention, and a lot of community visibility, and so, yes, there is a pretty keen community eye on when they do it, but it would be in the off-season of nesting, but, once that line has been crossed, the dredges are full steam ahead, and where they're pulling it from is just here's where it is, and we're taking it, and it's the least cost, or we send it and truck it in and dump it with dump trucks, and, either way, citizens get ticked off when it's going on, because it interrupts their day at the beach, but, in any event, it's --

MS. COOKSEY: Yes, that's a great point.

MR. YOUNG: I would almost put a period after "economics".

MS. COOKSEY: To highlight that that is what this is --

MR. YOUNG: Yes. As of to-date, and this is only on the logistics of dredging and economics, period. The environmental considerations dominated by -- That would be secondary, tertiary, at best.

MS. COOKSEY: Okay. Any other comments on Point 3? No. Okay. Then 4 is although minimization strategies have been developed for beach renourishment activities, such as those listed below as Best Management Practices, increasing demand for more and frequent renourishment activities from a growing number of coastal communities have increased pressure to locate borrow areas, and this is where we can change that wording to reflect sandmining, as well as borrow areas, in vulnerable and biologically-productive habitats, such as ebb-tide deltas and cape shoals, allow insufficient time for recovery (if recovery is even possible), and conduct activities during periods of high biological activity. Brian.

MR. HOOKER: Thanks. I guess I am trying to figure out what this one -- What the policy is. Is it that -- It seems to be stating -- I mean, and this goes for even the previous one, to some extent, and it seems to be just stating kind of a fact of -- Again, I don't work in the sand and gravel program, but my understanding is that, due to climate change and weather events, that more -- In order to stabilize, and, again, this is the larger picture of whether or not this is even a good policy, but, in order to stabilize the infrastructure that's already built, that some of these resources are needed, and so I'm not sure how, if I was one reviewing a proposal, this would help me in crafting an EFH conservation recommendation.

What it's really trying to -- It's true that, as more and more borrow areas are needed, that they're having to go further and further offshore, and that's why, after the Hurricane Sandy funding, there was a bunch of new mapping, to try to identify additional resource areas that we were involved with that are further offshore, and then, as I think this is also getting at, is the recent SARBO opinion, which tried to, again, in my understanding, present more options in minimizing impacts to different species and not necessarily being stuck in -- Again, my understanding, in talking to

some practitioners, is stuck in the current time windows without being able to consider other things, and so, again, I'm not -- I'm just trying to understand like what this is trying to get at, other than saying, wow, this really stinks.

MS. COOKSEY: Right, and I think those are all really good, and I hate to be the only one that's like defending the policy, because I'm not necessarily defending it, and I'm hoping that we can continually improve it, but, like I said, we started out with the idea that we needed to address emergent threats, and I really wanted to highlight the ebb-tide deltas and the cape shoals, because that is a kind of significant threat that has started to arise as coastal communities become more desperate to find cheap sand, that they're willing to go after these habitats, and so I think that was one of the reasons that that was included, and so, in essence, establishing our argument for why we are making these other statements, but definitely open to ideas to improve it, or make it more clear, or --

MR. HOOKER: I think something to the effect of that these -- That every effort should be made to avoid these particular areas, or something, and maybe that's getting down into the next section, but it seems to be that that part could be more clear, that that's the objective of this measure, or this --

MS. COOKSEY: So just maybe stronger, more clarifying, language?

MR. HOOKER: Yes, and it sounds like that you're trying to identify that -- There must be a BMP, a best management practice, like directly related to this then, and is that correct?

MS. COOKSEY: Yes, and so, if you scroll down, Roger, to the BMP section, this is kind of the start of it, and some of this was carried over, and we can go through the editing of it, but we start out with the development of a comprehensive environmental document and what that should be. If you keep scrolling, that's actually the longest section. Habitats designated as EFH HAPC or recognized in state-level natural resource management plans should not be used as borrow areas, and so that's getting at the ebb-tide deltas and the shoals.

MR. HOOKER: I would -- Okay. That's helpful, and I would try to make that linkage more clear between that and --

MS. COOKSEY: Okay. I think that's a good comment. Thank you. Go ahead.

MR. YOUNG: I would suggest -- Why would -- Since you referenced it in Point 4, the best management practices listed below, why wouldn't you put the best management practice directly below that Number 4 and call it (a) and then sub-categorize 1 through 8, and the other thing that I would ask is, is there a better way that the Army Corps knows of or could help initiate to lengthen the cycle of renourishment, through construction of whatever they come up with. Of course, it's got to take into consideration the tides and so forth, and current flows, but this cycle will just continue to become circular and more frequent, and that's my experience with it, unless there is something that is in the project that will keep the sand in place for a longer period of time.

MS. COOKSEY: I will see if any of the folks that are getting ready to speak address that. If not, I will add in later on. Wilson.

DR. LANEY: Thank you, Madam Chair. To Brian's point about Number 4, we're under the findings section, and so that's a finding. There is a corresponding BMP for it later on, and Sam made a suggestion that we move the BMPs up under each one of the findings, which you could certainly do, and that would require a major revision of the format, and I don't have any problem with it the way it is. I think it's clear that it's arranged in sections.

To Sam's point, I certainly would be willing to entertain any method that you could come up with for reducing the frequency of additional deposition of sediments on the beach, of materials on the beach, if you will, but I would note that, again, with climate change looming over us, and with an increased frequency and magnitude of hurricane events, which seem to occur in the South Atlantic with a great amount of frequency anyway, which is likely only to increase in the future, about the only way that I can think of to eliminate, perhaps, the necessity of such frequent deposition events would be a major change in policy, like the Netherlands has done, and implement tremendously expensive shoreline hardening, which certainly protects whatever infrastructure you want to protect that's behind it, but at what price, we have to ask?

That is a tremendous social cost, not only in terms of the required construction of the infrastructure necessary to hold back the sea, but also in terms of a substantial price that you pay for all the natural resources that use the natural shoreline, like sea turtles and shorebirds and the whole litany of creatures that use those areas, aside from we humans, and so that's something that you have to factor in here.

One thing that I do know, and Anne can tell me if these are included in the references, but some of our colleagues who were working for many years on Pea Island National Wildlife Refuge, Dennis Stewart, who was the refuge biologist, and Dr. Bob Dolan, who was at the University of Virginia, developed some methods for deposition that did tend to somewhat mitigate the impacts to emerita, the mole crabs, and the donaxes, which are a good bit of the prey base for some of the creatures that use the shoreline.

Even if the frequency is still maintained at a two to three to five years, the methods that Dennis and Bob were pioneering, in terms of the way you deposit the material on the beach, did seem to perhaps ameliorate the impacts to those animals in particular and allow them to recover maybe perhaps more rapidly than they would otherwise. Thank you.

MS. COOKSEY: Thank you, Wilson, for that. I appreciate it. Anne.

MS. DEATON: Thank you. I was just going to weigh-in that I like the way it's organized, with all of the findings and then your recommendations, basically, and it kind of reads like a resolution. Whereas these are the impacts, therefore we have these recommendations. Then the other reason is because the impacts are kind of intertwining, and it's complex, and so there may not be a BMP for every numbered item in the finding, and so I just think it would be difficult to do, and I think it's okay like it is.

As far as Wilson just asked about the references, and several of the references here are more of a review of multiple studies. The Greene one was by Atlantic States, and Hackney did a really nice synthesis, and there could be others, and so I think --

MS. COOKSEY: The Miselis reference is an -- That's the new publication out from the U.S. Fish and Wildlife Service that they do an amazing job in a very long tech memo, pulling together all of the many issues associated with beach nourishment and beach dredge and fill projects. I didn't mean to cut you off, Anne.

MS. DEATON: That's okay, and so what they did in Dolan up there at the Pea Island, and it may be covered in those, and I think it's worth looking at, but those are the type of minimization strategies that we do want to highlight, that you can still do it, but, if you do it like this, there will be better recovery of our benthos for the whole ecosystem, and so my one thought on all of this is we want to do it right, if we're revising it, and I don't think December -- If you talk about December or March, I don't think December is possible.

MS. COOKSEY: Thank you. Sam.

MR. YOUNG: Just coming back to Wilson's point, you mentioned the Netherlands and whatever cost that was, but, if we continue to do the same thing we've always done and expect different results, you know what that's called, and my thinking is that, if you look at alternative strategies, then this continuous and ever-growing cycle of renourishment, which we know is upsetting fauna and flora around our coastal communities, there is, and there can be, and there are a lot established in doing it another way that, yes, it's got this cost upfront, but you're going to be doing so much less in the future that you're going to hit your ROI in four or five years, and everything after that is gravy.

Until those ideas either -- If they come from the Army Corps, great, or whatever, or look at other -- The Netherlands or how they do it or whatever, but there's got to be some economic return on investment that could be quantified, if implemented. Yes, you bite the bullet upfront, and, after the payback, you're making money, and you're saving the habitat and keeping it in place longer and keeping the equipment out of the water, and I just think there's got to be a better way.

MS. COOKSEY: Wilson.

DR. LANEY: Thank you, Madam Chair, and, Sam, I appreciate your comment. I think the problem is, when you're looking at benefits and impacts, that there has never been, in my experience, such a thing as a complete economic study. When you look at the benefits of seawalls, and, of course, in Holland, the seawalls that they have are massive structures, and, yes, sure, there's a benefit to preservation of whatever infrastructure you have built behind those.

The problem is they don't usually look at the long-term economic losses associated with the loss of the ecosystem services and functions that were provided by the natural shoreline, and so you and I can talk about it more offline, if you wish, at some point in time, and that's my big problem with it, is a lot of these economic studies are incomplete. They don't look at the whole picture, and part of the reason they don't is because the whole picture is very difficult to look at and assess. A lot of times, there isn't a lot of information, and we don't understand what the impacts are until well after the project is done and we say, uh-oh, gosh, we didn't realize that was going to happen.

MR. YOUNG: Yes, and there's a lot of ways to skin a cat, but I don't think we've looked at -- I don't know that we've looked at any other ways, other than putting in some jetties, which actually create habitat and can curb the necessity for dredge and fill activities over time, and that is

certainly, to me, an option that should be considered, and it should be studied from an economic standpoint. You have an investment and a return on that investment over the long-term, and that's my point.

DR. LANEY: That is true, Sam, but I would refer you to the Oregon Inlet jetties project that's been proposed in North Carolina for literally decades, and I think is probably back on the radar screen of some people now. The problem is, with jetty types of projects, that you interfere with sand transport in a major way, and you also interfere with larval migration, or, at least at Oregon Inlet, that was the case.

Again, that was a case where the benefits of a jetty for navigation and channel stabilization overrode, at least initially, the concern for the ecological impacts and the long-term economic consequences to fisheries that would result when you made a major change in the ability of North Carolina's sounds to serve as a major nursery area for much of the east coast, and, again, we can talk about it more offline at some point, if you wish.

MS. COOKSEY: Okay. Thank you so much for that, Wilson. Brian, I've got you up next on the list.

MR. HOOKER: Thanks. Going back to the organization, again, thanks for clarifying that earlier, and I think we captured productive habitats as ebb-tide deltas and cape shoals, which are HAPC, and then EFH, making that connection, and I would also maybe, looking at the BMPs, break this into two, because you have kind of the spatial like HAPC and EFH component, but then you also have the temporal aspect, which is a separate BMP, and so in order, again, to follow that, you may be able to break that into kind of the feature itself and the spatial aspect into two different findings, because they result in two different BMPs.

MS. COOKSEY: Okay. Thank you.

MR. HOOKER: Then I think we already stated this, but the -- Maybe, again, and I think as Wilson eloquently stated, highlighting that, as a result of global climate change, and that's what is driving the -- Well, it's a combination, I think, of development and global climate change driving the need for -- You know, why is there this increased demand, and very briefly highlighting the drivers I think would be good.

MS. COOKSEY: I think that's a really good point, because that's what this discussion is bringing home to me, is that we need to not just assume that those drivers are clear to everyone. Thank you. Laurent.

DR. CHERUBIN: Thank you for the opportunity. I just wanted to follow-up on Wilson's and Sam's points, in particular with the jetties, and we know that jetties have physically been contributing to stopping the flow of sand, the natural flow of sand, that contributes to the natural renourishment of the beaches, and so I think it's definitely not the best idea to mitigate the issues that we see, and, in regard to regular renourishment, you can think that money that people are not afraid of basically throwing into the sea, every year or every other year, could be used for, obviously, better purposes.

I think one item that I see missing in this policy is what are the ultimate solutions to renourishment, and I know that Wilson mentioned what the Netherlands is doing, and the seawalls, et cetera, but we know it's not the best solution, because, downstream of those seawalls, you increase actually the erosion of the coastline, and so we know it's not a method that, in the long-term, is stable and robust and would contribute to more erosion downstream.

I wonder, in the literature, in the policy, I know there's a section about research needs, and do we need to think about other methods than renourishment to stabilize our coastlines, and I don't know what they are, and I have no idea, but I think maybe it's something we should think about and propose solutions, because, you know, you may submit a policy, but, if someone doesn't have a choice, what are we going to do, and apparently they're not afraid of throwing money every year, millions of dollars, and we could do a lot with that for the community in general, and so that's my point on that.

MS. COOKSEY: Thank you for that, and I think that was one of the reasons that we were talking about adding retreat more clearly in one of the earlier findings, to highlight that retreat should be an alternative that is actually being considered. We have a long history of people attempting hardened structures and have seen them fail, and so that is definitely not something that we would be likely to put forward as an alternative, but I am happy to hear any other suggestions on alternatives that folks might want to specifically include, and I am not seeing any hands right now, but certainly we can always revisit earlier or later topics.

Now we'll move on to Finding Number 5. The majority (74 percent) of the U.S. Atlantic coastline is less than sixteen kilometers, or ten miles, from a large-scale beach renourishment project that has the potential to impact a variety of habitats, including, and then we have our list of habitats. Any comments?

MR. HOOKER: I will just say, very quickly, that just the order of what I was just talking about of the drivers, and this is obviously -- Maybe it's just moving that and changing the order so that some of these drivers are kind of stated first.

MS. COOKSEY: Bring it up higher?

MR. HOOKER: Yes.

MS. COOKSEY: I like that. Okay. Finding Number 6 is a summary of the habitats potentially affected by the projects, and my voice is getting tired, and so I'm not going to read through all of that, but I invite you all to read through it and see if there is any comments or suggestions that folks might have.

MR. YOUNG: I like it.

MS. COOKSEY: Thank you. Okay. We'll move on to Finding Number 7, and, again, I am open to any ideas that folks have about reordering, and I think that was a good idea about moving Number 5 up a little higher, and so now we're on to Number 7. Beach renourishment projects also potentially threaten important habitats for anadromous species under federal, interstate and state management (in particular, inlets and offshore overwintering grounds), as well as essential overwintering grounds and other critical habitats for weakfish and other species managed by the

Atlantic States Marine Fisheries Commission and the states. Additionally, state and interstate-managed fishery species depend on the surf zone, as a nursery or foraging area can be adversely impacted.

The goal of this was to just highlight that we need to worry about and protect more than just the federally-managed species, that there are many other animals that are utilizing these habitats that are critical, and so, again, I'm opening it up for thoughts, suggestions, or comments. Sam.

MR. YOUNG: I have watched dredging going on, and I'm sure we all have, and I'm just curious, and I have you guys ever put a spotter on the -- Well, you can't do it on the intake, but there's got to be all kinds of critters that they're sucking up with the sand, and I am just wondering if you guys saw what was being thrown out on the backend, up on the beach, and what kind of life you see in that mix.

MS. COOKSEY: Does anyone else want to jump in and answer Sam's question? Yes, dredging is known to have many potential severe direct adverse effects on the animals that can't swim away, and so, yes. There are spotters on certain types of dredge equipment for a variety of projects, and, if you ever want to be horrified, Google what a hopper dredge does to turtles.

MR. YOUNG: I don't want to see that. Thank you though. I have seen what comes up on the end and gets stuck on the shore, and it's starfish and sand dollars and crabs and you name it, and it's a bunch, but I guess what we don't know -- I'm concerned about what we don't know about what we don't know.

MS. COOKSEY: We know that it destroys a lot of organisms. Number 8 is many of the habitats potentially affected by these projects have been identified as EFH HAPCs, and then we go through the list. Are there comments or thoughts or criticisms or anything?

Okay, and then the final kind of finding for the introductory portion is habitats likely to be affected by beach renourishment projects include many recognized in state-level natural resource management plans. Examples of these habitats include Critical Habitat Areas established by the North Carolina Marine Fisheries Commission, either in species-specific fishery management plans or in the North Carolina Coastal Habitat Protection Plan. My question to our South Carolina portion and Florida colleagues is are there any examples that you think should be added to Number 9? If anything comes to you later, please go ahead and send that along. It would be very useful to expand this to cover additional areas, if we can.

We now have kind of the long middle section, which goes into deeper depth of threats to marine and estuarine resources from beach nourishment activities and related large coastal engineering projects. Does everyone want to take a few minutes?

Well, I guess we've got it up here, and so, I mean, they're kind of straightforward, and most of them come directly from the previous policy, and all I really did was alter the wording, to try to reduce -- We previously had sixteen, and I just tried to work on rewording and moving things around, to get us down and to consolidate it a little bit down to ten, and that was really the only significant change in here, as well as just adding in some updated references, where I could, but this does -- Again, we're pretty limited on Florida, references related to Florida, and so, Rene, your

colleague -- Please send him my contact information, because I would love to get the Florida references expanded upon. Does anybody have any thoughts or comments? Okay.

Roger, do you want to scroll down to the BMPs? Starting out, one of the best management practices for unavoidable beach nourishment and related large-scale coastal engineering projects, and the wording here of "unavoidable" is a specific callout to -- Remember when I talked about our kind of goals are avoid and minimize first, and so we always try to avoid first, and, if we can't avoid, then we're going to seek to minimize what has been deemed unavoidable, and so that's where the best management practices come in, when something has been deemed unavoidable.

I just wanted to clarify that, and I don't know if we should clarify it in writing, because, again, I want to make sure this isn't read as we, the panel and/or the council, support the use of beach nourishment activities to protect coastal communities, and we're just trying to help minimize the adverse effects associated with it, and so any comments or thoughts on that? Paula.

MS. KEENER: I would suggest defining "unavoidable beach nourishment", as you just alluded to. I think, otherwise, it's subject to question. Thank you.

MS. COOKSEY: Does anybody have any -- Wilson.

DR. LANEY: Thank you, Madam Chair. Paula just said what I was going to say. I think we should define what we think "unavoidable" means. I think there is potential for a considerable difference of opinion as to what is unavoidable and what is not.

MS. COOKSEY: I agree, and that's why I kind of highlighted this as a question-mark. Does anyone have any thoughts on how we should define it or if there are other terms that we should use? I would love to hear those suggestions. Again, please -- This is the kind of item that folks can think about and can bring up to me later, as we go through the editing process of this. Anne.

MS. DEATON: I was just going to say maybe reword that to not say "unavoidable beach nourishment", because it's so often done, but maybe you could say where beach nourishment does occur, the council establishes, blah, blah, blah, because what is unavoidable? I don't think you could define it.

MS. COOKSEY: Right, and so, where beach nourishment does occur, the council -- I like that. Thank you. Sam, yes.

MR. YOUNG: I just agree with what she just said. I think they're all going to say it's unavoidable, and so I think you need to put some fences around that and reword it, and so I think that was a great point.

MS. COOKSEY: Yes, and I liked Anne's suggestion for that.

MR. YOUNG: Okay. I agree.

MS. COOKSEY: Okay, and so then we kind of get into the first BMP, which is kind of long, and it's very technical, and it's designed to reference around the preferred environmental document that would be prepared ahead of a beach nourishment activity, and it's almost entirely, other than

trying to tighten things up a little bit, what was in the previous policy, and so, again, I welcome thoughts, comments, and suggestions. Okay.

Moving on to the second BMP, this is a very long, established BMP that's -- There is nothing groundbreaking around this, but it's just good to continue to mention it. Fill material should match the sediment characteristics of the recipient beach, as closely as possible, and so this has long been a standard practice. Are there thoughts, comments, or suggestions? Okay.

Number 3 is dredging should be limited to bathymetric peaks, rather than depressions or level sea bottom in areas characterized by strong currents and sand movement, in order to increase sediment infilling rates and decrease the duration of impacts to benthic habitats, and so this has been a long-established policy and a way to try to reduce adverse effects. Any thoughts, comments, or suggestions? I feel like everyone is starting to get tired.

Moving on to Number 4, dredging should be limited to the shallowest depths possible, to minimize changes in wave, energy, and currents, thus reducing the likelihood of infilling with fine-grain sediments. Comments?

Number 5 is, in areas with seasonal benthic recruitment periods, beach nourishment and large-scale coastal engineering activities should be conducted during periods of low biological activity ahead of spring and summer benthic recruitment periods to allow maximum recovery of adversely-impacted communities. We have hinted at this, and there has been a strong push that communities start being allowed to do nourishment at all time periods, when, early on, it had been limited to late fall and winter. Wilson.

DR. LANEY: Back on Number 4, Madam Chair, I understand the rationale behind that one, and do we actually have papers that we can cite for that? I'm assuming those may be in here somewhere, but I just wondered if anybody has done any research comparing the changes that occur in hydrological conditions in deeper areas versus shallowest depths possible, because of what we were discussing earlier, the fact that the sources -- That nearshore sources are becoming limited, and those searching for materials to put on the beach are looking far and wide, and, in a lot of cases, are moving to deeper areas offshore, and so I was just wondering whether or not we had sufficient justification for this recommendation.

MS. COOKSEY: Thank you for that question, because it highlights the nature of language. Number 4 actually has to do with how deep in the sediment material is pulled from and so I need to work on rewording Number 4.

DR. LANEY: Gotcha. So you're talking --

MS. COOKSEY: It's not depth of water, but it's how many feet of material do you pull up.

DR. LANEY: Gotcha. That could use some --

MS. COOKSEY: That probably makes a lot more sense.

DR. LANEY: It could use some tweaking to make that absolutely clear. Then, as far as Number 5 goes, I think everybody is pretty aware that that whole issue is being litigated now, and so nothing more need be said.

MS. COOKSEY: Yes. Any other comments on either of those items? Okay. Limit maximum length or percent of island length of sand placement, to allow for benthic recruitment from nearby undisturbed habitat to speed recovery. Thoughts or comments or suggestions? This is a new one that was not in the previous policy, and so I wanted to make sure folks really gave it a little bit of thought. Anne.

MS. DEATON: I was just going to fess up that I added that, and the reason why is that some of the studies that we compiled that have been done -- Those were key to getting the invertebrates to recruit back faster, but it's the opposite of what's done now, because of mobilization costs, and so it's a good way though to get your invertebrates back.

MS. COOKSEY: Yes, it absolutely is.

MS. DEATON: That wasn't meant to be final wording, and it needs a little --

MS. COOKSEY: Right, and that's why I asked if there were comments on the wording, and we've had some really good input on wording, to help improve things, and so I value that. Jeff.

MR. HARTZLER: When it says "limit maximum length or percentage of island length, and I don't know if we would put in here, but, just out of my own curiosity, is there a guideline, like a formula or anything, that would help go along with that?

MS. COOKSEY: Not that I am currently aware of, but I think that's a good question. Some of the work that came -- Some of the recent Andrew Tweel and Johnson did on Folly, they talk about having areas of nearby undisturbed for recruitment into it as well, and they just refer to nearby, and so I think this is just trying to get at the fact that, if you do have undisturbed habitat nearby, it increases the speed of recovery, especially for the intertidal communities.

MR. HARTZLER: Okay. I just think it would encourage better behavior if there was a -- Again, it's probably going to take time, but if there was some formula, to some extent, for people to follow, and I think that would help, as opposed to just, if I have bad intentions, I am going to read that however I want.

MS. COOKSEY: Thank you. That's a good point. Okay. On to Number 7. Habitats designated as EFH HAPC or recognized state-level natural resource management plans should not be used as borrow areas. Thoughts or comments or suggestions? Okay. Then the last one, before we get to the fun discussion, is Number 8. Environmental windows should be used as a minimization measure. Where environmental windows cannot be adhered to, compensatory mitigation should be required. Compensatory mitigation could most likely be in the form of preservation of beachfront land that is directly under threat of development.

This is a new one, and so I'm interested in any discussion, thoughts, or ideas, and this is where we kind of tied back into the earlier discussion about saltwater mitigation banks, because there are

currently no forms of mitigation, that I am aware of, for beach dredge and fill, and so this was something that Anne and I discussed, and so I open it up to discussion on this topic. Wilson.

DR. LANEY: Well, off the top of my head, I think I like it. I would certainly welcome discussion of it. It would be interesting to hear what everybody else thinks about it, and it would be interesting too, Anne and Cindy, to take a look and see how much beachfront land that is directly under threat of development still exists in the South Atlantic region, and that is something that perhaps NOAA and NMFS would be willing to help us quantify.

I would think that information might possibly be available in some of the GIS databases that have been assembled, and so I would certainly like to know what the potential for that one is, if we could quantify it somehow, and that might be a very useful thing to do, as a precursor to deciding whether or not we should even include this one or not.

MS. COOKSEY: I will say that, even if it something that we decide to include, the framework for it to happen does not currently exist, and so, in many ways, including this is saying that the council has an interest in seeing if this concept can be developed in order to follow along with the policies that we have under Magnuson to avoid, minimize, and then offset, and, right now, we know that we are adversely impacting these habitats, yet there is no mitigation.

DR. LANEY: As a follow-up, Madam Chair, I agree, and it seems to me what we would have to look at here is, given that there is a lot of beachfront land that is not under threat of development, and it's already tied up for conservation purposes, like the National Seashores and like National Wildlife Refuges and like state parks and national parks and so forth and so on, isn't what we're really talking about here is, for compensatory mitigation, would be remaining privately-owned beachfront land that has not been developed, but could be developed, under current rules and regulations.

I think that's what we're talking about, and so it would be interesting to know, again, before we present this to the council in March, if that's our target date, because, if I was sitting on the council, I would be asking that question, is exactly how much land is available that we could use for this compensatory mitigation measure if the council decided that they liked it as a concept. Again, I don't have a problem with the concept. Like you said, I guess we would have to deal with the Corps of Engineers, in terms of their mitigation policy, with respect to whether or not they would even accept it or not, but I will defer to you on that point.

MS. COOKSEY: Right, and so this is where things get interesting, and so, under the 2008 final mitigation rule, and that was originally between the Corps of Engineers and EPA, under the Clean Water Act, whereas Magnuson-Stevens has its own requirements for compensatory mitigation, and we have signed-on to that rule, but there are times where NOAA can require mitigation outside of what the Corps requires, and that primarily occurs with federal highways projects.

My one example would be, in South Carolina, the Charleston District has not recognized shading impacts as an impact that they require mitigation for, but our federal highways is the federal nexus agency for these Department of Transportation actions, and they will -- They agree to provide mitigation for shading impacts from their bridge projects that are outside of what the Corps requires for mitigation under the Clean Water Act.

There is at least one example of a case where, under Magnuson, we require mitigation that is not required under the Clean Water Act, and so there is the potential that there is room to make this happen, as the legislation currently stands. Rene.

DR. BAUMSTARK: This might be my lack of expertise, but I am confused, or maybe just not clear, on what environmental windows are, and the first thing that comes to mind is maybe the presence of certain bird species or other inverts that breeding seasons can -- Is that an obvious thing to the community, or should we provide a few examples of what environmental windows refers to?

MS. COOKSEY: That's a good point, and so, in essence, we're referring to the seasonality of the activities, in order to speed recovery, and so having most of the work being completed in the wintertime, when sea turtles are not using the beaches, as well as having the work completed before the spring/summer recruitment periods for the benthos, and so we can work on that language, to make that clearer.

DR. BAUMSTARK: Maybe even a reference, because I see what you mean, and it's not just times for certain things, but it's when the stars line up, which is probably going to be unique for different places.

MS. COOKSEY: Right, and so like, in Florida, you guys have benthic recruitment year-round, and so the seasonal period is not quite as big of an issue down there, but you still have your turtle nesting periods, and now, with piping plovers having -- We've got to worry about their windows, because they are utilizing the beaches during these winter periods, and so we need to find that balancing act between our ESA species, but, yes, we can work on clarifying the language there.

DR. BAUMSTARK: Thank you.

MS. COOKSEY: Jeff.

MR. HARTZLER: I just wanted to echo Wilson, and I think I'm very interested in this one as well, and I just -- I am curious, coming from Florida, and I'm just trying to think of what is still left under development that is not already protected and how that would work, and so, again, I like what Wilson said, and I just wanted to echo that.

MS. COOKSEY: Okay. Thank you. Brian.

MR. HOOKER: Environmental windows, and you could put, in parentheses, "time of year restriction", and I feel like I hear time of year restriction more frequently than environmental windows, but it's the same -- It's two sides of the same coin, I suppose. The compensatory mitigation piece is good, and I guess it needs -- It probably needs a little bit more explanation of the -- As I think, Cindy, you were just referring to, but which statute you're using to achieve that preservation of beachfront land, and, again, I think you were trying to get at the shoreline retreat piece, and it's not clear that preservation of beachfront land is equivalent to shoreline retreat, and maybe help me if that's not what that is kind of --

MS. COOKSEY: Well, like I said, I mean, this is tough, because this is like a new concept, and, Anne, jump in in the conversation, wherever you think, but -- I don't necessarily think this is

outside of the bounds of what we might be able to accomplish under the 2008 mitigation rule, because let's not forget that this is, in essence, a dredge and fill operation, and the Corps requires compensatory mitigation for dredge and fill operations all the time.

I was just saying that, if the Corps were to balk, we do have the ability to require mitigation under Magnuson by itself, but, I mean, it's dredge and fill, but the preservation of beachfront land is specifically coming from the mitigation rule, in that, in order to qualify -- In order for preservation to qualify as compensatory mitigation, there has to be a direct threat to the land that will be developed, in order to qualify for preservation, and so that was kind of where that language derived from, but I definitely see where it might need a little bit more, or maybe we add a little bit more, and maybe we add something in the findings to help build the basis for this. Anne.

MS. DEATON: I was just thinking -- Well, I think that we're in the best management practice section, right, and so I think environmental windows are a best management practice, and so I feel like people are trying to get away from that, and so it does have value to be in there as emphasis, that that is one of the easiest ways they can minimize their impacts, and so maybe even just the first sentence, with some rewording, and keep that, but then perhaps the rest of it should go under, with some rewording, the research needs section, to figure out the best process to do that.

That could get you your information about whether there is land available, like wetland, and it could be -- In my mind, I was thinking like a mitigation fund, and then it wouldn't have to be an undeveloped lot next to where the beach nourishment is occurring, but maybe like at the end of the island, where it's even more dynamic and where you would want to prevent development.

MS. COOKSEY: Okay. I kind of love that, because it is such a new idea, that concept that we move it under -- You know, as a top research need, being able to develop appropriate compensatory mitigation for beach nourishment and borrow area impacts. Okay. Let's go ahead and jump into research needs. We've already got our first one. Any thoughts or ideas or comments that folks want to jump in with? Is it the end of the day and everyone is tired?

MR. HOOKER: Well, I think you said the -- I mean, you've pretty much stated cumulative effects, right, and you have it there, but you want to get to more --

MS. COOKSEY: If you guys have more specific -- Like we've got the cumulative impact research will expand on the mitigation research, but any specifics under either of those umbrellas, as well as any ideas outside of those umbrellas.

MR. HOOKER: I am just throwing ideas out, but a lot of the things that we're talking about is what beach nourishment will do to long-term productivity of these systems, correct?

MS. COOKSEY: Right.

MR. HOOKER: So is there just a study on productivity in -- Again, for potentially nearshore environments of -- I don't know, and everybody was talking about Florida being the one that probably has the most activity, and really trying to be specific about maybe a particular area where it could be achievable, you know really trying to narrow down what metrics you're using to look at cumulative effects.

MS. COOKSEY: Right, and so, in some ways, I actually was thinking of it more of a meta-analysis and trying to pull together research that has already been done, but to evaluate it in a comprehensive fashion, rather than trying to, at least initially, fund baseline work, but I would --

MR. HOOKER: It doesn't have to be exclusive, one to the other, and one could be a meta-analysis of some kind, and then the other could be either a hindcast of productivity changes in nearshore environments in the age of dredging or something, and I don't know. Wilson, go for it, man.

DR. LANEY: Okay. I was waiting for Madam Chair to recognize me, but I will jump in there.

MS. COOKSEY: Go for it, Wilson.

DR. LANEY: You guys are going where I was going, and I think that we could do some sort of meta-analysis, as Cindy suggested, and, Brian, I like your idea of trying to look and do some hindcasting, or maybe some analysis of here's what we thought was going to happen, and here's what actually happened, and it would be interesting to know what the relative impacts on production are, and I think you said this, that result from different deposition intervals.

Obviously, if dump material on the beach every year, that is very different than dumping it on the beach every five years, and what is the relative economic impact, in terms of fishery losses or shorebird breeding impacts, because they're not in the best of conditions to lay their eggs, because the mole crab and coquina clam resources were not there, and so forth and so on, and there's a ton of questions like that that we could ask, and there may be some answers already out there in the literature that just haven't been pulled together, because nobody has done the kind of meta-analysis that Cindy is talking about, and so, yes, I would definitely support that and leave it up to Cindy to craft some draft wording to throw in there for an initial one.

I like Anne's -- You know, the compensatory mitigation thing could definitely go under research needs, and we could recommend doing the kind of GIS analysis, to see how realistic it is, first of all, because it would be totally dependent on how much land that is under the threat of development is actually out there that might possibly be available for mitigation.

Then the meta-analysis thing would certainly be Number 2, and I think, if you give the panel a little bit more time here, maybe even overnight, we can think of some more explicit questions to ask that would contribute to future research that might help us to answer that fundamental question of what is the long-term impact on production of these systems, and it's hard, because we have to think, and I have always said this, not just because most of my career was spent working on highly-migratory creatures, but, when you are working on systems that are so dynamic, like this one is, it is extremely difficult to think broadly enough to consider all of the resources that may use these habitats during the course of a given year.

Then, when you throw climate variability on top of that, and when you throw, for example, variability in recruitment on top of that, which is also related, again, back to climatic conditions, it makes it all the more complicated, and it's just a tremendously complicated system to work with.

MS. COOKSEY: Thank you, Wilson. Paula.

MS. KEENER: Thank you. I lowered my hand. Wilson covered my comment. Thank you, Wilson.

MS. COOKSEY: Yes, and I think that was some great input, Wilson. Thank you very much. We are at 3:40, and I don't want to close the conversation early, and so I want to give everyone one more round, and please raise your hands if you have any comments or thoughts or suggestions on the research needs, or any part of the document.

Based upon the comments that we kind of heard earlier, I think that there was an interest in going ahead and pursuing some additional editing of the document that would could then send out to -- The sub-committee can work on it further, but then send it out to the full panel ahead of the spring meeting, so that we can work on finalizing it at the spring meeting for submittal to the council, and do I have thoughts or comments or ideas on that? Sam.

MR. YOUNG: I was going back to much earlier today, to where we talked about what's going into our estuaries from coastal communities, in terms of nutrients and whatnot and how we try to stop that and protecting our habitat and ecosystems, which, quite frankly, are, for the most part, eutrophic, in many areas, and approaching eutrophic disposition in too many more, and I don't think there's enough attention being given to that and the sources of where it's coming from. Anything we do on land is going in the water, and I don't think people get that connection.

MS. COOKSEY: Okay. Thank you. I mean, I am not going to disagree with you, and certainly I know, in the past, we have discussed water quality issues before, and it's certainly something that we can add to further discussion in the future. Wilson.

DR. LANEY: I will just say Amen to what Sam said. He's absolutely right about that, and that may be covered, Sam, under some of the other council policies, but you're absolutely right. My question, Madam Chair, is, if I'm remembering correctly, Roger said there is no council Habitat Committee meeting at the December council meeting, but there is -- Did I hear him say there was one scheduled for the March council meeting?

If we wait until our April AP meeting to consider this again, then it won't go to the council until June, and I would defer to Roger and Myra and Carolyn to say if there's a Habitat Committee meeting scheduled for the June council meeting or not. If the next one is March, and there isn't one in June, we might want to consider trying to get an edited version of this around via email early enough so that we could take something to the March council meeting.

MS. COOKSEY: Can any of our council folks speak to that? Roger.

MR. PUGLIESE: We technically don't have scheduled for March or June, and so you can definitely likely have a meeting in one or both, and so I think the important point is what the AP feels to make sure that the revision to this policy is following what they want to do, and, if you feel that you need to have an additional direct meeting to discuss this, and possibly be in-person next time, that is a possibility, and so this actually could be brought back after the April meeting and then to the June council meeting.

As stated, if you would like to advance this more rapidly, we could look at some type of an interaction via email and agreement and advancement. That, I think, is the preference of the

advisory panel on how rapidly you want to bring this forward, and the need to get this in front of people I think is important, and so I think that is also a consideration. I think I'm not sure if our Chair of the Habitat Committee, Carolyn, had a preference, from a council perspective. I think a lot of this has to do with making sure that the panel is comfortable with what's being forwarded to the council for consideration.

MS. COOKSEY: Carolyn, do you have any thoughts on this?

DR. BELCHER: No. I mean, I'm willing to represent however you all want me to, understanding workload within the council too, but I think that's one of those things that it's just whatever you comfort is with a project that you want to see presented, and then we can see how the timing works out.

MS. COOKSEY: When would we need to have the final version of this document to you all for it to be considered in your next meeting? Does anyone know?

DR. BELCHER: The next meeting meaning March or June?

MS. COOKSEY: Yes.

DR. BELCHER: I would have to default to Myra. I mean, I know we're drafting agendas well ahead of time, and I know we are looking at our workplan within the council, and so I think that generally is part of what we do in the council session, and so I guess that's -- Like I said, it's a matter of timing and where we are going into the December meeting and getting ready for the March meeting and just seeing what the workload looks like.

MS. COOKSEY: Okay.

MR. PUGLIESE: I will jump in a little, and it's going to depend on -- I guess what it comes down to is we would have to have briefing materials in advance of either one of those meetings, and they're going to be a month-plus out, and so we're looking at the end of January or say into -- Right after the April meeting for the June, and so, I mean, there's a couple of timeframes, at least, and those would need to be prepared in advance of the briefing book, and that's mainly what we would try to accomplish.

MS. COOKSEY: Okay. Myra.

MS. BROUWER: Basically, it's just reiterating what Roger said, and I just have some dates for you all. The briefing book for the March meeting is going to be posted on February 18, and so it's pretty early, and we try to have all the material, of course, ahead of time, so that council members have time to read it and digest it. For the June meeting, that briefing book would be posted on the 27th of May.

MS. COOKSEY: Okay. Thank you for that information, and so, again, kind of turning to the panel, does the panel have any thoughts? What about for the members of the -- Wilson.

DR. LANEY: Well, I don't -- There isn't any particular urgency that I can think of, and, unless Roger tells me otherwise, Roger or Myra tell me otherwise, and, given that we all know that this

particular issue is being litigated in several different venues at the moment, it might be that we have some more insight into Number 8 in particular, given a little more time, and I don't know, and I will just throw that thought out there.

I like Roger's point about the fact that, if our April meeting is going to be in-person, that would be good, and then we could shoot for having something ready by that May 27 deadline for the June council meeting, and so I'm good with either doing it earlier or doing it later, and we do have a workgroup, Madam Chair, working on this one, right?

MS. COOKSEY: Yes.

DR. LANEY: So, also, I would be interested in hearing input from those of you on that workgroup, too. You know, the holidays are coming up here upon us very, very quickly, and so if --

MS. COOKSEY: Well, if you have been getting emails from me on the working group beach nourishment, then you're on that committee that we set up last March, and so I feel like maybe we continue to have the working group provide comments on this and work on absorbing all the information that we've gotten in today, which has been wonderful, and thank you to everyone who has provided comment, so that we can have kind of our final draft version to provide to our AP at our spring meeting, so that we can then be prepared to submit that for the council for their June meeting.

DR. LANEY: A question that I have, real quickly, Madam Chair, for Roger and Myra, and help me remember, because I don't remember, but is this a -- Once we have this redrafted, do we normally run this by the other APs for input from them as well, before it goes to the council?

MR. PUGLIESE: We haven't in the past, Wilson. This is coming from -- Because this body is the body that provides the policy recommendations. One thing that I was just going to jump back in on is I think it's important to make sure that this is good, because, as we get into the discussions tomorrow about advancing the habitat blueprint, et cetera, I think one thing that is really important to understand is the council really is interested in highlighting and making a lot of this information more accessible, through the developing new website that's going to be coming down the line, and more available, and even highlighted with more information that provides access, and we're even talking with our information group to determine how more to expand the availability of the habitat information and the guidance that the council has into the future.

My message, I guess, is it's important to get it right, and also that opportunity that -- To a lot of the points that individuals have been making about availability and getting this in the right hands and making sure, and I think that is part of what's going to come down, and this group will also help provide mechanisms that can make that more efficient, too.

MS. COOKSEY: Okay, folks. I think we've got a plan moving forward for this, which brings us to the end of our first day. Thanks again to all of our participants today, all of our speakers, and we will be reconvening tomorrow at 9:00 a.m. to go over the development of the council's habitat blueprint and AP input, and so I believe that -- Wilson.

DR. LANEY: Madam Chairman, would you just summarize our plan? Are we going to try and get it ready for review at our April meeting and then get something to the council by June? Is that the plan?

MS. COOKSEY: Yes. That will involve us, folks on the sub-committee, doing some work ahead of time, and so, after this meeting, I will kind of incorporate the edits, as best I can, and send out another doc for everyone to review, so that we can really try to make sure that we have got it in a good place for that spring meeting, so that we can get it finalized. Okay. Well, unless I see any other hands, and I don't see any, I believe we're calling it a day. Thank you, all.

MR. PUGLIESE: Thanks, everyone. I would encourage you, if you haven't had a chance to look at some of the material, on especially the habitat blueprint, and there is a specific description of the Habitat AP's responsibilities into the future. Take a look, and this is an opportunity to provide some additional guidance to the council on where all that effort goes.

(Whereupon, the meeting recessed on November 3, 2021.)

- - -

NOVEMBER 4, 2021

THURSDAY MORNING SESSION

- - -

The Habitat Protection and Ecosystem-Based Management Advisory Panel of the South Atlantic Fishery Management Council reconvened via webinar on November 4, 2021, and was called to order by Chairman Cindy Cooksey.

MS. COOKSEY: Good morning, all. It's about two after nine, and so I wanted to go ahead and get our day started, day two of the fall 2021 Habitat Protection and Ecosystem-Based Management Advisory Panel meeting. We have a very busy morning today, and we are going until approximately noon, and I hope to have a break about mid-morning.

We've got two really important topics to go over that actually are going to need a lot of our input, and so I really encourage the panel members to raise their hands and speak up and give the input that the council really needs from us now on the habitat blueprint that the council is developing that Roger and Myra are going to take the lead on. After that, we will also be getting a presentation on the east coast climate scenario planning from Roger, and so, if Roger and Myra are ready, I would like to kick off our first topic of the morning.

MR. PUGLIESE: Okay. Good morning, everyone, and welcome to day two. One additional day of webinar, and hopefully, in the not-too-distant future, we'll be back in person and be able to enjoy a lot of the benefits of that one-on-one communication and coordination that I think this -- Which has really been the foundational effort of the advisory panel to really make things happen, but, given that we are in this situation, I would like to move forward with a pretty significant effort that is undertaken, and I think it really highlights a lot of the foundational work that the advisory panel has provided the council over the years.

The council is moving forward with a habitat blueprint, and, today, what we wanted to do is to lay out some of the information available, so we have an opportunity to provide some guidance on if there are any areas missing, some of the different functional components of it, as well as an operationalization of the structure, or function, and description of the advisory panel itself and provide some input.

I think what that specifically goes to is the fact that this panel does operate significantly differently, and almost closer to the SSC, in terms of the way it combines information and provides guidance and even policy recommendations that the council refines and adopts and advances, and so, with that said, I would like to -- You have been provided a couple of different pieces of information relative to the habitat blueprint.

The first is a September review, touching on kind of the overview of the overall program, and the blueprint itself is an effort by the council to basically restate and evaluate the goals and objectives and really advance the information on what the council's responsibilities are for habitat, the players in habitat, and also really enhance the information and access and availability and engagement with both our partners, even refining our coordination with the conservation division and how that translates up to the council, as well as how we guide and develop future policies into the future.

With that said, the council is relying on a workgroup that has been compiling and building the information that supports the development of the blueprint, and this has gone through the members of the council as well as staff, to help set the foundation for this information, and multiple meetings have been held in April, May, July, and October to identify a lot of the information and the supporting documentation and develop actions for the council and committee and also continue to have progress.

What has gone on so far is that the council, through the workgroup, has developed program goals and objectives and actually has been approved by the council in June of this year, looking at the requirements, habitat requirements, and the council's actions in response, both regulatory, how the council has responded in terms of protection of habitat from fishing activities, as well as the non-fishing activities and how it has implemented policies and developed guidance to advance that, and also the process that we go through for both commenting and more clearly understanding the broader EFH consultation process.

One of the efforts already, even though the blueprint hasn't been finalized, was some of what happened yesterday, in terms of that more close review and coordination with Habitat Conservation on the consultation process, where things may be rising to the top, in terms of significant actions and areas that the council needs to be aware of, and be able to coordinate and provide additional input as the process goes forward.

In addition, one of the other efforts is looking at some of the other tools and capabilities, and we've touched on that, and this panel has provided a lot of guidance in the past on online information, through the habitat and ecosystem page, the FEP online, FEP II, which has connections to a lot of the different -- Either the GIS tools or some of the information systems that are provided and all of the information that is either provided through the FEP components there or through even all those linkages we had to back the more detailed state information, and so understanding how all those things are available and how those can be advanced and expanded.

One of the aspects that -- The latest was the atlas that is online that really consolidates everything at this stage, and it provides connectivity between a lot of the spatial information systems that the council has been involved in, and so additional guidance on how that links with the existing council activities, but also other online developing systems that may be able to be drawn on.

In addition, advancing how we coordinate with our partners and understanding the roles that different partners have had is something that is being evaluated and highlighted within the blueprint itself, and the intent is that this is going to be developed and further advanced and the council will be looking at a broader overall draft, either in a standalone -- We may have a standalone council meeting, council or committee meeting, in the winter of 2022, or we'll see how that unfolds, because that's what the plan is at this stage, that they advance to move forward.

The idea though is that the blueprint itself is going to be fairly consolidated, and it's something that you can grab and capture and really understand the workings of the council's mandates and the directives and the engagement over time, but also into the future and understand all the different aspects, and so it's going to be a fairly concise individual paging and linkages to significant activities that really highlight the overall information, such as one of the parts of this is going to be connected directly to the EFH user guide, which really does lay out and has maintained a coordination between the council and Habitat Conservation, to really understand those designations and clarifications of any refinements and make it very clear about those, as well as the EFH designations and the HAPCs.

One of the unique aspects is that there's a lot of those, and we had a lot of discussion the other day about the importance of outside of the federal waters jurisdiction, and I think that highlights a lot of the state areas that have been designated as EFH HAPCs, and so that's really important, to not reinvent the wheel and build on that and connect to those different activities.

Ultimately, one of the other things I think that's going to be really important too is how this information is available online and accessible and really having an outreach and access, and that's being discussed literally with the advisory panel that guides that for the council, on how some of these different pieces of this information can be better presented and how that can be potentially expanded on the website, et cetera.

That kind of lays out at least the structure, and then, ultimately, moving into a workplan to address any of the recommendations that may come out of it, and I think some of the other things that you've already been providing input is advancing, as issues are rising up, where the advisory panel has provided guidance on policies, that last time providing some guidance on what may be the priorities for next steps, and I think some of them are becoming more obvious than not, such as all the discussion we had in the last days on energy, and so some of that guidance on what staging, what some of the next updates and revisions and things like that I think are also going to be coming out of the blueprint, and I think also some of the guidance that's already been provided, somewhat, will help step forward, and so things like our energy policy may be something that may be a recommendation that that is going to need to really kind of get in line with a lot of this going forward on renewable energy into the future.

This at least lays out some of the timelines that we've been working through so far to develop and bring some of the information. Now, one of the things that is different in here is that we do not

have a committee meeting in December, and so that is where potentially a separate meeting may occur in advance of the March meeting, or that is a timing thing that we will just have to address as we move forward, and so, as we complete a more base blueprint, that will advance and move into the future, and, as I noted at the bottom, adoption in 2022, and one of the points that is right below here is this outreach and communications, and it's going to be important, and that's happening in November, and so that's going to really provide that opportunity to understand and highlight how information is really advanced into the future and understand better the public partners and contributors, et cetera.

With that, Myra, I was going to -- I guess, before I go much further with this, is maybe see if you wanted to touch on any of the highlights of where we are and where we're going, beyond what I have stated so far.

MS. BROUWER: Thank you, Roger, and good morning, everybody. I think you pretty much captured everything, and I just wanted to just clarify a couple of things, and then I thought that I might just quickly go over the goals and objectives, so that the AP has a -- Because I guess these haven't been brought in front of this AP, and so I will just go ahead and -- There's not very many, and I will just read through those, real quick.

I just wanted to clarify that, right now, while the blueprint has been developed this year, the council has been not wanting to expand, right, and so the idea is to look at what has been done in terms of the products and the services that have been developed to support the council's activities related to habitat and make sure that those things are in fact addressing what the council is mandated to do under the MSA and how those processes and services and tools and things that have been put together over the years are addressing what the council does and what they need to be doing, in order to also allow the council to be more involved and more engaged in some of the things that the MSA mandates councils to do, such as the EFH consultations.

The blueprint is also going to define the roles of the various partners, as Roger said, and the processes. Like, for example, how does it work, and what are the steps, when the EFH consultations come through and the various levels and kind of better clarify the roles that each entity has, and certainly the Habitat AP being the major player there, and also how the council can be engaged at the various stages of those processes, and so the blueprint will have that information, and, as Roger said, mainly it's supposed to be kind of guide, a reference.

There will be a lot of links to the various documents and summaries, and hopefully a lot of it will be integrated in a way that's going to be more accessible when the council launches their new website, which is coming up, and so all of these things are happening kind of all at once, and that's why we're trying to make sure that we engage the APs, and, as Roger said, the Outreach and Communications AP is going to be kind of just giving us their general feedback on some of these things, particularly how we convey to the public the role of the council when it comes to habitat and what they can and cannot address under the mandates. That has not been very clear sometimes, and the public doesn't understand that there are some things that the council really has no control over.

In terms of the goals, and so there's two main goals that the council has approved for their habitat program, and, as Roger said, this happened earlier this year, and so the first one is to comply with the habitat mandates of the MSA and its amendments, and, within there, there is five objectives,

mainly, obviously, to describe and identify EFH for the fisheries, as required in the council's FMPs, provide the information for use in those FMPs, to minimize the adverse effects on habitat caused by fishing, identify other actions to encourage the conservation and enhancement of habitat, and provide information to support the council's role in these mandatory EFH reviews, and then, finally, provide information to support the council's comments on activities by the federal and state agencies that may impact the habitat of the resources the council manages.

Then the second goal is to provide information to support the council's communication on habitat issues, and so provide research needs for consideration in council research and monitoring plans, provide priorities for those habitat research needs to inform regional planning and research in the region, provide information to support the council responses to habitat-related requests for information and provide information to support outreach activities on habitat.

Quickly, I just wanted to make sure those were conveyed to you all, and I think, at this point, Roger, I guess we wanted to mainly show you this job description, quote, unquote, job description for the Habitat Advisory Panel, which is something that the council requested. They wanted to have a better understanding of the role of the AP, and so we put together this job description for you all to give us some feedback on, and this is very similar to a document that the Scientific and Statistical Committee has approved for that advisory group, and so I will pass it back to you, Roger.

MR. PUGLIESE: Okay. Thank you, and I guess we can start with that, and then we can bounce back to overall just general input on any additional input on structure or other things that may need to be addressed or that you feel should be addressed, looking at what's been laid out for the blueprint so far, but let me just walk quickly through what we have and then, again, to get the response. As I said, this was important, because the council does view this group as providing guiding principles on habitat and a connection to the broader ecosystem conservation in our region.

MS. BROUWER: Roger, I'm so sorry to interrupt, but I was just going to ask you to please scroll down the hands raised, because I think some AP members may have questions as we go.

MR. PUGLIESE: There we go. Thank you. I guess, before I get started, Paula.

MS. KEENER: Just a quick question. Thank you for this update so far, and, Myra, where would I find those five goals that you mentioned, please?

MS. BROUWER: Thanks for that, Paula. The goals and objectives were presented to the council, and I believe it was in June, and so it would be in those briefing materials. They are not currently like posted on the website or anything like that. We have not done those things yet, because we have this upcoming revamp of the site, and so, right now, they are included in the draft blueprint, which has been presented to the council in their various briefing books throughout the year, and so I can't really point you to a specific place right now, and I would be happy to send out an email to everybody, if you would like to see the goals and objectives that were approved.

MR. PUGLIESE: I think Wilson also had a question.

DR. LANEY: Thank you, Roger. If you could -- Well, just a question about the membership of the workgroup, and I know that Steve Poland has left the council, since he assumed the duties as

Chief of Fisheries for North Carolina, and so is Carolyn going to jump up to the chair of the group, now that Steve has left, or is Steve going to stay on it? I don't know.

MR. PUGLIESE: No, and Steve is no longer on it. Carolyn is on it, and I assume that's going to be the step, plus we also have the opening of that position. Myra.

MS. BROUWER: Thank you for that, Wilson. The bottom line is I'm not sure. Steve was present the last time the workgroup met, which was right before the September meeting, and so we really haven't had a chance to figure out -- I mean, Carolyn is already part of the workgroup, and she is now Habitat Committee Chair, and we also have Trish Murphey, who has been on the Habitat AP for a number of years and who went on to replace the seat that Steve left on the council, but I don't want to put Trish on the spot or Carolyn on the spot, and I think we're going to need to sort out who needs to step in, but most of the work has already been completed, I will say, and so hopefully it's not going to take us that much longer to finalize putting this together and bringing it before the council.

MR. PUGLIESE: I think the participation by both is going to be important, but, as Myra said, I think a lot of the lion's share of what the workgroup's function was is advanced, and so now it's really going to be kind of taking it to a broader step of the committee and the council deliberation on this.

Given that, let me go back to the job description, and this is not downplaying any of the other information, and I just wanted to touch on this first, and then we'll go into the overall activities, just so it's clear. The way this is laid out is to really try to very specifically understand the authorities of the council and the directives and the mandates to address essential fish habitat, both from fishing and non-fishing activities, and then it lays out a lot of the components that the advisory panel has been mandated, or directed, to provide input to the council, but in a way that it's visible, because a lot of this has just been working in the background, and so this is one real opportunity to highlight the significant role that the panel plays.

Again, one of the unique situations, because the panel is tied very closely to the mandates under Magnuson for EFH, and so it has almost more of a congressional direction to advance and provide input to the council, and so the responsibilities, as laid out, initially, it identifies and provides one of the most significant ones is to support the identification of essential fish habitat, as mandated under Section 305 of the Act. There is a very direct connection to Magnuson Act authorization and responsibilities, and the advisory panel has provided that input on EFH and EFH HAPC designations and inputs into and supporting those for all the FMPs and into, as I mentioned, that broader user guide that really lays out a lot of that, and it's really good, because it does connect back into designations that cross into the states and complements a lot of the state activities.

The other authorities on this highlight that second very direct mandate, and that is with regard to coordination and commenting on other activities, and this is really what helps the council, given that a lot of activities do not have timeframes that can be dealt with on the regulated comment timing, is the ability to develop policies that can contribute and provide a mechanism for a more rapid turnaround, plus it also coordinates directly with habitat conservation, so that those policies can be provided, as Cindy had indicated, to individuals that are involved in either developing permits or reviewing those and affecting the process. This makes that other additional connection

directly to the council's mandates under commenting and impacts on non-fishing activities on mandated, or regulated, and managed fisheries.

Under the list of tasks, it does lay out that first stage on the identification of essential fish habitat, recommendations to the council on identification, and it also identifies the threats, and one part of the blueprint does lay out the threat table that the group had developed in the past, and we'll double-check to make sure that still is as accurate as possible, because what it did is it did a really good job of identifying the threats and connecting them to the developing policies.

Also, recommendations in response to -- This is a draft, and so there are some little tweaks in here, but EFH and HAPC threats and the impacts, and then, specifically in drafting those policy statements, review and approval by the council, which is one of the more unique things that our council's advisory panel provides to the council, different from many of the other areas in the country.

Also, information into FMPs, and so a lot of the information that is provided to support the EFH designations and that is highlighted from going all the way back to the original habitat plan and then the Fishery Ecosystem Plan and the online FEP component has a lot of the detailed information on habitat, and it even reaches back into one of the things that I think was really important in the last iteration, and it was highlighting a lot of the state information, whether it be mapping or a very detailed description of especially the estuarine habitats, that those connections between what we have and what the states are made clear within some of the online capabilities, and that's what has been developed, and so that is laid out.

Also, this is a broad one, that the AP perform any other necessary and appropriate duties to carry out functions under MSA, and, in the past, the group has provided input and direction on the Fishery Ecosystem Plan and on priorities for actions to address the implementation, and that would fall under this broader sense of any other mandates under Magnuson as we move forward and advance as we look into climate and other activities and areas that the council is looking at other non-fishing impacts, such as wind and other development in the future, and it's going to be reaching back to, and so this kind of gets folded under a broader sense of other MSA mandates that may need to be addressed. I think Paula has a question.

MS. KEENER: Yes, I do. Thank you, Roger. A quick question. I know that "threatened" is formally defined under ESA. Is there a formal working definition, or just a formal definition, for a threat to a habitat, as we are referring to it here?

MR. PUGLIESE: Cindy may weigh-in on that, but I would say the only place where some of those get highlighted is say in the EFH HAPC designation, and some of those wordings that provide guidance on identification of HAPCs may be tied to what level of impact or threat may be there, but a formal definition of "threat" under here -- I think that is somewhat determined by if it is impacting EFH or HAPC, and so I will let Cindy kind of go, if there's any more formalized definition.

MS. KEENER: Thank you.

MS. COOKSEY: The definition that we routinely use for a threat is we actually call it an adverse impact, and that is any reduction in the quality or quantity of EFH, and so it's a pretty broad categorization of quality or quantity.

MR. PUGLIESE: Actually, that terminology is directly in, I think, the way the Magnuson terminology for EFH, when it's laying out the guidance, but the bottom line is it's essentially in the view of the council and NOAA Fisheries, et cetera, if it has an impact, and so it's a very broad definition.

MS. KEENER: Right, and so, I mean, this could come into play later on, or early on, in terms of refining the definition, because potential impact, to me, and impact, those are very discrete events. A potential threat could be an activity that is taking place along a boundary area, to designate a habitat, and so I may be wrong, but what I heard you both say is that a potential threat equals a potential impact/impact, and so I'm just bringing forward do we need to have clarity, more clarity. Thank you.

MR. PUGLIESE: I will, again, bounce to Cindy on that, but I think the idea is that it's supposed to give it a broader latitude of it is, in the opinion of the council or NOAA Fisheries, a potential adverse impact, and it can be either a direct or indirect threat that they can respond, and it's in the purview of the group, and, Cindy, you may clarify that.

MS. COOKSEY: Yes, and so, Paula, here's an example that might help kind of how we deal with that issue, and we have consultations in which we will provide conservation recommendations for EFH-adjacent habitats, and so, while a habitat, and this would usually be a non-tidal freshwater wetland that is adjacent to tidal freshwater habitats, and so while it's not -- Because it's non-tidal, it's not designated as EFH, and it is such that, if it were adversely impacted, so that we had additional nutrients flowing into our EFH, or just a general reduction in water quality, lower DO, that that is still an adverse threat that would potentially reduce the quality of the habitats that we're managing, and so we can still address those kind of outlying threats, if that helps.

MS. KEENER: Yes. Thank you.

MR. PUGLIESE: Okay. Thank you. I think the idea is that it's supposed to be as broad as we want to interpret it, because I think there is latitude to really make sure that you're trying to protect the habitats or the managed species that depend on those. Given that, let me continue. Wilson, did you want to jump in, before I go any further?

DR. LANEY: Well, I just wanted to ask you, Roger, if you wanted us to pose questions as you go through it or just wait until you get through it and then jump back and ask questions.

MR. PUGLIESE: Let me just run through it once, and then we'll go back to the beginning, and I will just kind of give a scope of what's laid out here, and then we can go through it, if that's okay.

DR. LANEY: Yes, that's fine. Thank you.

MR. PUGLIESE: Myra.

MS. BROUWER: Thanks, Roger. Sorry. I just noticed something, while I'm looking at this on the screen, and I wanted to just point it out, and that should not say "SSC meeting". That should say "AP". That's it. Thank you.

MR. PUGLIESE: That's why I said it was a draft, a working draft, and that's exactly why, and I caught that too, a little bit ago, and I went, oops.

MS. BROUWER: Yes. It's a little confusing. Okay. Thank you.

MR. PUGLIESE: Yes, and I was going to get to that. This is a working draft that literally has not gone anywhere else, other than kind of here, and then initially in the workgroup itself, and so you're the first to see this working draft.

To that, that area itself talks about the meetings itself, and we usually have a spring and fall meeting, and it identifies that we hold one in Charleston or virtually, and hopefully we'll continue to have these. If anything, we may have a virtual on top of the in-person meeting, and so it might be supplemental, or individual sub-panel meetings even, and the idea is that the meetings are held, and the report is developed after the meeting, and the chair of the advisory panel provides that report back to the council.

We have a little bit of a refined process that we went through last time, in terms of a presentation and a report-out that we're going to be continually refining as we advance this, but that is the process, and this should be the "AP", as noted, and the conclusion of each of advisory panel meeting. This does identify two weeks in this, and that's a recommendation, and your thoughts on what that may be, or should be, because, really, what this is doing is setting up the -- Usually, what happens is this finishes, and then say, for example, the April meeting is concluded, and this is brought forward to the June council meeting, and the November, or October, AP meeting is brought forward to the December council meeting, and so that timing is such that they are tied to those.

This next area has to do with coordination at a number of different levels, and one we've already seen with the development of the sub-committee to develop the first iteration of the beach renourishment policy, and this lays out the ability to create ad hoc sub-committees or working groups to address those specific issues. The tasks can be accomplished through email or video conference, et cetera.

Also, those are usually done on a volunteer or assignments, and they can consult with other experts who are not on the AP to get input, but that helps at least refine it, and I think we're actually doing that with some of the input that we need for say the Florida information, or references, and this advancing already on some of this.

Now, this moves to the next stage, which has to do with the state sub-panels, and that is one of the structures that was always, again, unique for this advisory panel. We created state sub-panels to really be able to have that ability to look and really refine information specific to an individual state, and the connections to the states has been really important in advancing this process, and this does lay out the structure of what those panels are, and those recommendations would be brought back to the full AP. This, I think, is an opportunity to expand further coordination, because we have talked about trying to have some state sub-panels meet separately, and, if there is a state-

related item, that they could focus on that and then provide that back to the council, or say two that may have the same issue to address, and bring that back to the broader advisory panel, and then that gets to the council.

That is something that I think can expand further, and there is support to do that, and so, again, this is a whole process that can refine and advance and build on all the work that has been done to-date, and so that does lay that out.

Some of this expectations and meeting deliberations, this is very much tied to a similar way that it's laid out in the Scientific and Statistical Committee, just trying to relay what some of the expectations -- This is done by consensus, and try to advance the information by consensus, and it lays out that it's based on science and scientific principles, and it's relying on professional standards and no toleration of personal attacks and some of the areas that are just operationally laid out, very similar to the way it's done for the SSC.

Then participation and the need to continue participation, so that you are contributing to the area, and a clarification that it's not necessarily something that provides a leverage point for an individual, but it's really trying to work as a group to provide guidance to the council, as far as possible, and so that's more operational, just to ensure that the group's dynamic stays effective.

The composition, the members essentially are appointed and serve at the pleasure of the council, and it's composed of scientists with habitat and biological and ecological and ecosystem expertise, and members include federal, state, university, private, and others, and, again, this is capturing a lot of what has been developed to build the panel and the sub-panels, and any of the things that -- You cannot have compensation directly that would influence you, and the way we function with a Chair and Vice Chair that would serve for two years.

There is a little bit of refinement, because the way we've coordinated that is our efforts to try to connect into direct state participation, so that we make sure that we have that crosswalk, and I think that's one of the things that just has happened, with Stacie stepping up as Vice Chair, and, right now, it's identified that there is twenty-six members, and it's laying out the membership.

One difference that has come out of this is the workgroup had identified the state panels, and they were looking at some of the input from fishermen input, and actually potentially coming from the advisory panel, and this is an important point that this panel needs to weigh-in on, because this is one of the differences that has come out of this, is that some of the fishermen seats that has been identified that were at-large seats for states were dropped out of this, and potentially would be relying on other advisory panels, and this is an important point that you all need to weigh-in on, what your thoughts about that would be.

Overall, at-large research and conservation positions are appointed for three-year terms, and those are ones that would be advertised, and there are some operational, and termination, which has to do with -- Again, this is tied to the way some of the SSC wording -- In terms of contribution or issues that may arise.

Also, as I mentioned before, some of the -- This is kind of reiterating the point that I just made about there is a core that are designated agency seats, and those are basically just we go directly to the agency, and we need confirmation from who that representative -- We function that way, and,

again, this is very different than many of the other advisory panels, because those are standing positions for those organizations, and then we have at-large, which really just have to be advertised.

This really is kind of the timing on selection and coordination with when the vacancies would be replaced and timing, really, for just how those would actually be done, and so I wanted to at least give you the overall, and I will open it back to the members to touch on any of the individual areas and provide comments to the council on what your thoughts are on this and how to refine it or expand or edit, wherever, because, like I said, this is really just internal, coming from the workgroup to here, and then this will go -- It will, ultimately, get integrated into the draft of the overall blueprint for consideration, as we go down the road. Jeff.

MR. HARTZLER: Roger, when you scroll down to the part where it had the breakdown of the individual seats, that the conservation -- On the sub-panels, that conservation seat, that would be removed?

MR. PUGLIESE: No, and the conservation seat is there. What's removed in here is there is a fishery -- We had positions that were for either recreational or commercial fisheries seats, and those are not on there right now.

MR. HARTZLER: I see. What was the reasoning behind not having them?

MR. PUGLIESE: There was a desire to figure out if there was a way that you could go to the existing species advisory panels and draw on that, and that's why I said this is an important point that you need to weigh-in from the panel membership on how it operates now, versus a transition to something that would be like that, and so, no, the conservation seat stays in here, and that's actually one of the ones that would be advertised for each of the states.

MR. HARTZLER: Okay, because I think -- I mean, again, I am probably the least-qualified person here, in terms of science and everything, and I am probably from that fishing seat, and so I definitely think that perspective is important, and, obviously, I am just one voice, because I might not have the educational background that most people have, but I am somebody that is actually out there all the time in the water, and so, again, I'm just one person, and I think it's an important voice to have, but that's just my opinion. Thank you.

MR. PUGLIESE: That is why I wanted to make sure that members weigh-in on this, because this has been the way it has functioned, and it's looking to the individuals in the field, both the recreational and the commercial representatives, and it kind of can go whatever way the states really want to go, but those have been, in the past, ones that are either on the water seeing issues or directly involved in activities at the state level and have a desire to advance beyond just the fishing side and into protection of habitats. Wilson.

DR. LANEY: While we're on the membership thing, I will just say I understand the challenges inherent in coordinating a large group of folks, and, by knocking out the recreational and commercial angling representation from each sub-panel, you save eight positions, I guess. However, I totally agree with Jeff in thinking that those perspectives are very important, and so I wonder how -- I heard what you said about the idea being, well, we can coordinate with the individual species APs to get angler input, be they commercial or recreational, on habitat issues,

and I wonder how effective that would be though in comparison to having that representation on the panel.

I think, in particular, back to the days when we had Susan Helfer and Jinx Michael on there from South Carolina, and those two folks were highly engaged with the AP and always providing good perspectives from South Carolina, and similarly with Terry Pratt from North Carolina, who was a commercial, and also probably a conservationist rep too, because he was the president of the North Carolina Wildlife Federation for a while. I don't know, and I will think about that one. Like I said, I understand the challenges of managing a larger AP, but I also think that it might be less efficient to try and secure that sort of input from the other species-based APs, and so that's what I will say about membership, for the moment.

Then, if you would, scroll back up, Roger, to the -- Go back to council expectation and scroll down. As far as the tasks go, that third bullet up from the bottom says to review habitat information in council FMPs and amendments, and I would suggest that we should consider expanding that, just a bit, to indicate that scientific literature, for sure, because some of us are still pretty much in academic realms and get a lot of information that comes in in new peer-reviewed paper, and so maybe we could expand that to include council FMPs and amendments and other sources of information.

Then one big source of information now, which the Habitat Committee historically had a hand in creating, is the council's Ecopath model. I don't see any reference in here anywhere to that as a source of information, and maybe I missed it, but I think that is something that's very important for the Habitat AP to, one, be aware of, and, two, be briefed on the use of, because I think it can provide a tremendous amount of insight into how the South Atlantic habitat functions, from a species and ecosystem species interactions perspective.

I would like to see something, somewhere in the plan, that says that the Habitat AP is going to be at least briefed, to the extent that they're aware, of how the model works and what it can be used for, because the next bullet says to provide recommendations on habitat-related research and monitoring priorities, and now, that we have this functional Ecopath model, which is only going to get better through time, that's another way that the Habitat AP could recommend to the model team, and/or the SSC's model workgroup, I guess, research questions that they might like to see posed to the model for getting some sort of insight into how things are working in the South Atlantic. I will stop right there and notice that there's a long list of people that want to speak, but those are my two big points here for those two bullets.

MR. PUGLIESE: Thank you, Wilson. What we're going to do is we will compile those as connected to this, when this goes back for council consideration. David.

MR. WHITAKER: Good morning. Thank you. Roger, back on the page where you had the additional seats by state, and this is my inexperience in this area, but, as you know, the Florida Keys National Marine Sanctuary has a steering committee which is chaired and has, obviously, membership of basically similar backgrounds that we have on the habitat committee, but they have also -- The sanctuary and the steering committee have also created a specific water quality committee, with the intent of reaching out to Florida water management, the Everglades, and other organizations trying to deal with the water conditions in south Florida and along the sanctuary, which, obviously, bleed over into federal waters.

Is there any thought maybe, and I don't know what the -- Obviously, the sanctuary is under NOAA, and I don't know what the conflicts might be there, but the person that's the chair of the steering committee is not an employee of NOAA, nor is the person in the water quality committee, and is there any room, or any interest, in maybe having that voice included on the Florida sub-panel?

MR. PUGLIESE: Those are the -- This is why this is being brought to you all. Now, actually, there was a seat for the sanctuary directly on the panel, and it is not on here right now, and I think it's mainly because we have not gotten them to provide a membership, and, again, that's a comment.

There is two places that that could happen, either at the at-large seats, and one was a sanctuary, and that used to be the early warning system of anything going on through the entire sanctuary, and it's just we have not gotten a member since George Sedberry dropped off, or retired, and we have not got a new name to add to that seat, and so that is something that is different from the existing, also. Either at the at-large seat or the idea that they could participate, and that's something -- That's why it's being brought to you. If it's significant enough, that may be a recommendation that you want to advance to the council.

MR. WHITAKER: I would do that, because I have just recently been involved with both the steering committee and the water quality committee, and it's my anecdotal impression, and it is anecdotal, that there is a group that has become much more aggressively involved, and there is a tremendous amount of participation at both steering committee meetings and the water quality meeting, one of which is coming up next Monday.

I don't know what the proper protocol is, and I could certainly speak to the chairman and raise the issue about their participation, or whether that should come from you or the council, but if you will just communicate to me what you would like me to do, if anything, to try and determine what level of interest there is, I would be happy to do it.

MR. PUGLIESE: I think what we're at right now though is that, if that's a recommendation on either how the panel should be expanded, either participating directly there, or as a member of an at-large seat for the sanctuary, those are -- I mean, that's the kind of thing that you can advance in this, and we can incorporate that kind of recommendation, because this needs to get back to the council, and the council would have to refine it as part of the process.

MR. WHITAKER: Well, I would certainly make the statement that the sanctuary, either through the sanctuary directly or the steering committee or the water quality committee, should be a part of this, and so I will just leave it at that.

MR. PUGLIESE: Thank you. That's great. Paula.

MS. KEENER: Thank you. Similar to Wilson's comment about the Ecopath model, I'm wondering if there should be a specific reference to the ESR and the CVA here, and I don't know, and I'm just bringing that up for discussion.

MR. PUGLIESE: Well, I mean, this group has been the group that has been involved in getting the briefings on all of that, and so, I mean, that's something that can be a recommendation, to

expand that as one of the tasks to coordinate with, because I think both of those are going to provide guidance on how those get implemented on the bigger pictures on climate issues as well as on how you address any changes in habitat, changes in species, and the whole thing that I will get into next on some of the climate variability and what we're going to try to address, and so that would be something that could be a recommendation of expanding.

Again, one of the things is they included this kind of more generic on any of the functions under MSA, and so any of these could be identified as that, but, being more specific, I think what I am hearing, for a number of these different ones that are broader and have a broader scope, and so that would definitely be one that we could add in as a potential recommendation under here.

MS. COOKSEY: I hate to jump the line, but I just have a clarification question, Roger, and this might be just because it's my first meeting as Chair, but I want to make sure that we do this correctly. When you say that we provide this as a recommendation to the council, can we rely upon the minutes, where, as our panel members are commenting here, we can go back and pull the recommendations that I am hearing, or is there some more formal procedure that we should use to ensure that these recommendations move forward?

MR. PUGLIESE: What the plan was, it was to get this input by the members, and then what we can do is add in -- I will work with you, and we will add in those comments under the individual sections of this, and so, as this gets advanced, some of those recommendations will be highlighted in those specific sections, and so, yes, we will draw on the minutes to make that happen, but that will be part of an attachment to the report that goes to the council, and so I will work with you, and we will ensure that these specific recommendations get translated into this document and then into the draft that gets returned back to the council.

MS. COOKSEY: Okay. Great, and so that's just something for the panel members to keep in mind as they make their comments that, if you can include a statement that this is a recommendation that you would want to move forward, then that will help us be able to pull this out of the minutes, so that we can add it in and move it forward. Thanks.

MR. PUGLIESE: Okay. Tom.

MR. JONES: Being the Georgia recreational fisherman representative, I very much would like to see the recreational fishermen stay in on this. Also, recreational fishermen feel slighted, or low on the totem pole, on fishery priorities, and having a voice is important to me and other fishermen on this and other committees.

The second point that I wanted to bring up was the at-large, the three at-large, seats, and I thought the at-large seats were not limited to researchers, but they were for our flexibility, or the council's flexibility, to add more representatives as needed, but I didn't think that all three of them were research positions.

MR. PUGLIESE: Well, at the at-large -- Over time, I think there are variations on it, because Wilson, I think, fits into one of those, and so the council has adjusted, as needed, to get the expertise they wanted to within here, and so those at-large actually, over time, have kind of focused on researchers or broader coordination on understanding of ecosystems, et cetera, and so those ones, under the at-large membership, have been at that level.

MR. JONES: Thank you, but I am still sticking strong for a fisherman representative, a recreational fisherman.

MR. PUGLIESE: Gotcha. Thank you. Rene.

DR. BAUMSTARK: Thanks, Roger. I have questions, but I will say, starting off, that I will support, or I do believe, that having a rounded perspective is important for this panel, and the fisheries, whether it's commercial or recreational, but the folks in the field are an important part of providing that perspective, and so I did want to ask. In the past, my understanding is that we have had that fisheries representation, and it looks like it would be here called conservationist, and, when necessary, go to the panels that are species-specific. If that's the case, it seems like that's working, and, if that's the case, it seems like that's working okay, and why would we be changing that?

MR. PUGLIESE: Well, that's why you're commenting here, and, actually, the conservation seat is a stand-alone, and that's existing now, and there were two seats per panel that were fisheries seats, and it was basically up to the state on whether it be commercial or recreational, and it's become -- They select the ones, and so that's what it was in the past, and so --

DR. BAUMSTARK: Okay. Thank you.

MR. PUGLIESE: Your message, I think, is clear, but the conservation -- I just wanted to clarify that that seat is something that has already been there, but it's that the two -- There was almost at-large fishing seats, and so it would be however the individual state wanted to contribute.

DR. BAUMSTARK: Okay. Then I would say that I would not want to risk the perspective and keeping around the perspective on the panel for the sake of having a more manageable group of people. I have another question, and so it looks like here like the NOAA CZM, for example, and the federal representation -- Are those seats that would be filled potentially by the same person representing multiple states, or are we talking about a state-level representative for each of those federal --

MR. PUGLIESE: No, and those are Southeast Fisheries Science Center and Southeast Regional Office, and, basically, the SERO position is actually -- The SERO and Habitat Conservation are, right now, the same, and so those seats, unless they are going to bring in a different representative right now, Habitat Conservation is under SERO, and so that actually is one seat. The Southeast Fisheries Science Center, we historically have had a representative from say the Beaufort Lab, because of the connection to ecosystem, the past, but those are stand-alone federal seats.

DR. BAUMSTARK: Sure. Sorry, but I am referring to the -- On the state level, I see the U.S. Fish and Wildlife Service, and I believe it's NOAA CZM, right, Coastal Zone Management.

MR. PUGLIESE: Those are state CZM, and so --

DR. BAUMSTARK: Okay.

MR. PUGLIESE: We have representation, right now, for each of the states' coastal zone management. No, those are state-specific coastal zone management, and, in Florida, it's actually been the water management district, because of the -- While this says CZM, that's actually been the water management district, because that's the interactions that we have built to be at the same level, at least, as we're going into the future, and so those are definitely state-specific. Those are state individuals on Fish and Wildlife, and those have, in the past, been representatives that are in the state, and so those are -- These really are truly state-specific. While they're federal, those are state-specific positions.

DR. BAUMSTARK: Okay. Well, for Florida then, it just seems strange, because FWC is Fish and Wildlife, to have another what looked like a U.S. federal Fish and Wildlife, and that threw me off there.

MR. PUGLIESE: It's formerly the actual federal Fish and Wildlife Service and not the state, and it's the federal --

DR. BAUMSTARK: It is federal, and so that gets back to my original question. Is that a seat that would be filled at the state level, or is that a federal person that would represent -- Are those four additional federal seats on each sub-panel, or could it be filled by the same person?

MR. PUGLIESE: They are four individual -- They are a Fish and Wildlife representative that is in that state.

DR. BAUMSTARK: Okay. Got it.

MR. PUGLIESE: So they would be individuals, and they would not be like a federal-level person or a national-level person, and they would be a representative, and they are right now, a representative in the state that's working on state issues for Florida, state issues for Georgia, state issues for South Carolina, and state issues for North Carolina.

DR. BAUMSTARK: Thank you for clarifying, and I'm just thinking about the numbers here and why we would not have -- How large the panel can get if we include representation from the fisheries. Thanks, Roger.

MR. PUGLIESE: Thank you. Anne.

MS. DEATON: I think that was partly my question, is this conservationist seat, and was that new, or is it existing, but it sounds like you're saying the conservationist seat is -- It can be a recreational fisherman or a commercial fisherman or an NGO. Like, I was picturing a conservationist being an NGO, like maybe someone from The Nature Conservancy.

MR. PUGLIESE: We have conservation seats in all four state panels right now, but I think it has ranged from an individual that is working with state activities in an organization to one that actually serves or works with a specific NGO or a fisherman that is working on conservation, and so I think there's latitude. The council has taken a latitude to kind of pick anywhere within there that would serve under that conservation umbrella, and so it already exists, but it can cross any of those.

MS. DEATON: I see. Okay. So, right now, who do we have on our -- Is there anybody on our advisory panel now in a conservationist seat? I am just trying to like figure this out, and I'm looking at the list on the website, and so John Ellis is our U.S. -- In North Carolina, John Ellis is the U.S. Fish and Wildlife Service, and Rita is -- Rita Merritt is commercial fishing, and David Glenn is -- Is he representing -- Is he a NMFS seat? No, and he's from National Weather Service.

MR. PUGLIESE: Actually, Rita is under the recreational seat, at this time, and David Glenn is under the conservation seat.

MS. DEATON: Okay. I've got it. So the only thing that's changing is you're broadening that seat, and so it could be fishermen, and it could be -- It's broader.

MR. PUGLIESE: I think it's already that. I think that seat hasn't changed at all. I think the change in the panel was the removal of the fisheries seats, and that's really the only thing that has changed.

MS. DEATON: Even though some of the conservationists are fishermen?

MR. PUGLIESE: Yes.

MS. DEATON: Okay. I understand. Thank you.

MR. PUGLIESE: Sam.

MR. YOUNG: Sorry that I joined late, out of necessity, but I'm trying to zero-in on where we are right now, and what does the acronym "HEAP" stand for?

MR. PUGLIESE: Habitat and Environmental Protection Advisory Panel.

MR. YOUNG: Okay, and so that's us.

MR. PUGLIESE: That's you.

MR. YOUNG: I got the MSA from my other acronym list, and I've got multiple acronym lists, and so I'm building on that, and this -- Is this another committee that is being set up or has been set up and exists today for -- I am not quite sure what we're talking about here.

MR. PUGLIESE: Okay, and so I guess you missed the beginning of this. What this is, it's the Habitat and Ecosystem Advisory Panel, and what is being proposed under the overall new habitat blueprint is an actual job description for the functions, the structure, and the responsibilities of the advisory panel. This is not anything new, and this is you. This is the group that we're here, and this is an opportunity to kind of more formalize and lay out the information, so that people understand the importance and the value and the responsibilities that this group has and the structure, and this is the opportunity to provide input on those, as well as guidance to the council on how this gets integrated into the habitat blueprint. That's where we are, and that's what this is, and this is not a new group. This is some refinement of the structure, potentially, or elaboration on the functions and the capabilities of the group.

MR. YOUNG: Okay, and so, with the screenshot that I am looking at right now, if these sub-panels -- Wouldn't they, whoever is DNR or U.S. Fish and Wildlife Service -- Are they not participating in these forums today, like we are?

MR. PUGLIESE: Yes, and, I mean, what is going on is this is laying out the structure. What has happened though is that, going to the workgroup, there was discussion on the layout, which this is the bulk of the layout of it, but they removed the fisheries seats in here, and it talked about potentially having connection with the individual APs, versus having the at-large seats, and the members have been providing their input on what that means and concern relative to inclusion of that perspective in the panel, as well as even other considerations about refinement of the panel structure or membership, and so that's one piece of it. The whole thing has to do with not only that, but also responsibilities, and members have been providing input on expanding, or clarifying, some of the connections to other responsibilities that this panel can provide to the council, and so that's where we are with this.

MR. YOUNG: Well, I guess I'm not familiar enough with the blueprint yet to make an informed comment, other than just saying the layers to this onion is expanding, just ostensibly to me, but, again, I'm new.

MR. PUGLIESE: Okay, and so what you're trying to do, as I mentioned, is to really clarify the structure and the layout and responsibilities, and this is an opportunity for the panel members to weigh-in on what you see here on how it has operated in the past and into the future and your recommendations on how this -- What's the best to ensure that this group provides the guidance and recommendations to the council in an effective way, and so that's the input you're getting from here right now. Thank you, Sam.

MR. YOUNG: Okay. Thank you.

MR. PUGLIESE: Wilson.

DR. LANEY: Thank you, Roger. Just because it's been brought up, I will just say a brief word. For those of you who don't know me well, I worked for the Fish and Wildlife Service for thirty-eight years, and the Fish and Wildlife Service representation from each state is to try and capture boots-on-the-ground from a federal agency which has very similar responsibilities to the National Marine Fisheries Service, when it comes to the Fish and Wildlife Coordination Act, which Pace discussed yesterday.

Also, it has some responsibilities, under the Atlantic Coastal Fish Cooperative Management Act, and also, to a certain extent, under the Magnuson Act, as far as the council's go, and so, historically, while most of those representatives within each state, Fish and Wildlife Service representatives within each state, came from the Ecological Services Division, we have also had representatives from refuges, and we had Mark Epstein as our Florida representative for quite a few years, and Mark was extremely active in habitat restoration within Merritt Island National Wildlife Refuge, for example, converting a lot of the diked wetlands back to wetlands that opened to the -- They were reconnected to the estuary.

Then we also have a fisheries representative, in the person of Dr. John Galvez now, from the Florida program, from the Fish and Wildlife Conservation Program within the Fish and Wildlife

Service, but the others from Georgia and North Carolina and South Carolina are all currently Ecological Services staff, and so that's just to give you a little background on that.

One other -- I guess it's both a question and a comment, and that is it seems to me that one of the things that the Habitat and Ecosystem Advisory Panel needs to do is to be aware of what the SSC is doing, in terms of habitat, and it sort of seems now, and I will look to Myra and Roger for any feedback on this, that the SSC sort of -- It's understandable, and they review models. They review assessment models, and so it's logical and understandable that they would review and sanctify the Ecopath model for use in providing the council with insight relative to the ecological functioning of the South Atlantic.

Again, it seems to me that it's important for the Habitat and Ecosystem Advisory Panel to understand and be aware of that model as well, and so something that I don't see built into the job description here is some tasking of the Habitat and Ecosystem AP Chair to be aware of what's going on in the SSC and for there to be some cross-communication between the SSC and the HEAP. To me, that's something that would be beneficial to the council as well as to the SSC and the HEAP as well, and so I would like to see a -- I guess it would fit under -- Since this is the HEAP work description that we're talking about, it would fit under the HEAP tasks, and that would be for the -- I guess for the HEAP Chair and the HEAP membership to be aware of any sort of task assigned to the SSC, which currently includes the Ecopath model I guess, that relates to habitat, and I will shut up at that point.

MR. PUGLIESE: Wilson, I think, to some degree, the crosswalk with you and the SSC was something that I think was also -- The idea is that maybe a liaison or opportunity to -- I wouldn't use that word, because that has all kinds of implications, but the opportunity to keep the AP abreast of those types of things, and so that may be somewhat of the function you have, but to explicitly identify that there is a connection, or at least a crosswalk, between that maybe there.

DR. LANEY: Okay. I mean, that's a good point. I forgot. I guess I'm the only person on the HEAP, at present, who is also on the SSC, and so, yes, I certainly don't mind providing that linkage, but I also think that Cindy, as the chair, would like to be very well aware of what sort of habitat engagement the SSC is having as well.

MR. PUGLIESE: Okay. Thank you. We have David and then Myra.

MR. WHITAKER: Thank you. I think I generally support the proposal that you have here for the membership. However, I will say that, when I was on the council, I learned a lot about what was going on in the fisheries by going to these AP committee meetings, and I wonder -- Well, one thing is the AP, say the Snapper Grouper AP, you've got people on the water from the whole region, multiple people, and sometimes you get a diversity of opinions about what's going on, and so you can kind of put all of that together, whereas maybe one or two people might have that observation sitting on the HEAP, and so you might get a better picture by going to the other APs with those things.

One concern that I have is, is there a feedback automatically for habitat-related discussion in the other APs that kind of gets back to the HEAP? It would be nice if somehow some of that was summarized back, or perhaps someone from the HEAP could sit in, at least virtually, on all the other APs, to listen to that information and ask questions, perhaps.

The other point that I might make is that I think, and correct me if I'm wrong, but it looks like most of the people that are on the HEAP at this time, or at least the professional folks, are regulatory people, and yet, on the SSC, you've got researchers and regulatory people, and I wonder if it would enhance the HEAP to have someone, for instance, that goes out and actually does bottom surveys and has experience in the ocean, as opposed to regulators, and that's sort of a rhetorical question there. Thank you.

MR. PUGLIESE: David, to that specifically, I think that's one of the -- When you look at these at-large research -- The last position I think that was added to the at-large position was a state researcher that was tied to some of those, and, in the past, we had positions that tied back to that, and so I think there's some latitude, and that's been done at the overall at-large seats, but we've never actually done that at say the individual state seats, where you could have connections there, but, again, that becomes that whole idea of expanding, and, I mean, I think it's an important point, given everything we heard about mapping and characterization and all of that. A lot of that has been on the other state, versus necessarily on the state side, but that's a consideration.

MR. WHITAKER: Thank you for that, and I see that at-large researcher, and I see what you're talking about there, and so that would be helpful, I think.

MR. PUGLIESE: That may be an avenue to have an at-large seat, may it be research fisheries or whatever at the state level, and those are opportunities, if that's a recommendation or an idea that could be relayed. Myra.

MS. BROUWER: Thank you, Roger, and thank you, all. This is really useful discussion that we can certainly bring back to the council. I wanted to go back to Anne, and she had asked about the conservationist and what exactly does that mean, and I was looking through my notes of the conversations that the workgroup had on September 8, when they last met, and, at that time, as I mentioned before, Steve Poland was on the workgroup, and he mentioned that the commission in North Carolina had recently sort of wrestled with that issue, in terms of defining what a conservationist is, and so I guess I was just putting that out there, to see if Anne perhaps could -- If she had any extra information about how the commission had approached that, and so that was one thing.

Then I also wanted to point out that the workgroup also considered potentially removing the conservationist seats and then creating four at-large seats, to bring in expertise as needed, and that was just a comment that was made, and, again, I'm just going to remind everybody that this is, as Roger already stated, a draft, and so we're interested in getting your recommendations and justifications for why you think the particular expertise is needed on this panel to assist the council with their mandates relative to habitat, and so this is all good, and that's all I have for now. Thank you.

MR. PUGLIESE: Thank you, Myra. I think we'll go to Sam and then Cindy.

MR. YOUNG: Thank you. I agree with what David was pointing out between the HEAP and the SSC. From what I'm understanding, it's that we do have a member at that table, the SSC table, and that is Wilson, and is that correct?

MR. PUGLIESE: Yes.

MR. YOUNG: Okay, and so, if you attend their meetings, you would be our liaison, if you will, to make sure that the work we're doing, as the HEAP, is in lockstep with the direction of the SSC, and is that correct?

DR. LANEY: Well, yes, I guess. I mean, I don't know about the lockstep part, but what I have done, in the past, since -- Well, let me just say my relationship with the council in the past has been complicated, and I have worn many different hats, but, for right now, I am on the AP, and I'm on the SSC, and so, yes, Sam, I do advise the HEAP about things that the SSC is doing, and especially relative to the Ecopath model, since that's the major kind of habitat thing they're working on, but, also, as they do amendments, they talk about habitat issues, and one of the big, looming ones that the SSC is working on right now is recruitment.

You know, how do we factor recruitment into these assessment models, and do we -- One of the big questions is do we use a long-term average of recruitment, or do we use recruitment from the most recent ten years, or the most recent five years, and then there's a whole bunch of questions about what affects recruitment of a given individual species, and that's very much related to environmental factors, but it's also related to the age structure of each individual population and so forth and so on, and so the short answer is, yes, I try and do that, but I may not always be here, and we may not always have an SSC member who is also on the Habitat AP as well, and so that's why I was trying to conceptually say, hey, I think this is something -- This relationship between the SSC and the HEAP needs to be captured in this document somewhere, somehow.

For right now, I guess you could say, yes, Wilson is on the SSC, and so it's kind of covered, but it might not always be the case that it's covered, and so how could we capture it in words that would sufficiently make sure that happens?

MR. YOUNG: So, if I wanted to attend a webinar, and not as a participant, but as a listener perhaps, of the SSC, is that something that is accessible to me to do, if I wanted?

DR. LANEY: Yes. SSC meetings are public. Members of the public attend, and the chair recognizes them. There is a public comment built into the SSC agenda, and our present chair, Dr. Genny Nesslage, is very, very open about providing multiple opportunities for public input during each SSC meeting.

MR. YOUNG: Okay. Well, that's good to know. Are there any other committees that have crossroads with our charter, as the HEAP? I just want to make sure the left hand knows what the right hand is doing.

MR. PUGLIESE: Right, and I guess one of the areas that there is probably a more recent is going to be the work that's going to be done on outreach, by that group, and it's going to be specific to advancing information on habitat, and so I think the opportunity to see what comes out of that, as some ideas of how to advance and be able to make the information more accessible and available and all that, and there's a crosswalk with that advisory panel.

MR. YOUNG: I am going to throw this out on the table, but I spent two full weeks at MREP, and that kind of launched some things, and then I got deeper and deeper involved with some APs on

the other coast, but, to me, certainly as a sitting city councilor, and on the resiliency committee for the county and whatnot, it's that our leadership at the local level will talk a good game and deliver nothing, and so I think we could, in my mind, make a huge impact if we could mandate, maybe from DeSantis and maybe the Secretary of Commerce, from NOAA to him, to come down and, maybe as a pilot, just do the South Atlantic region and then have a condensed two or three-day required attendance to get kind of a distilled version of MREP, so that these guys that only play golf and tennis and don't live by the water, or near the water, and don't care about the water, start to get the education, because they don't have it.

I guarantee that they don't have it, and, if we gave them that, their sensitivity level to what's going on around their locality, in terms of water quality, I think would get much more attention, and the other piece is that, as the state continues to develop and grow, many people that are buying down here -- They look at the water and think that's normal, and it's not, and so that's the toughest nut to crack, is the common citizen at-large, and to reach them and get the message across is difficult, because a lot of them are just snowbirds, and they come down, and they want to maybe fish, but mostly play golf or tennis and party and go home, but they leave a footprint behind that impacts our environment ongoing, and none of that seems to be addressed.

To me, if we're going to make some real change, it's to make sure that our local county officials be exposed, in a two or three-day forum, but hit all the high points from what MREP -- So that they understand the implications of what they are doing or not doing that impacts the waterways at-large.

The other point I made before I departed the council there was there was a gal that was a realtor, and I said, well, don't you think, under full disclosure laws for real estate, that you should be disclosing to your customers that they are purchasing a property on a waterway that's been deemed officially impaired by the Florida DEP, and she said, oh, no, no, we don't want to do that, because they would lose sales, but it just gets -- Until you address it with the local leadership, because they are the ones that implement the plans, and they will authorize the monies to make the improvements, and, if they don't know about them, if they don't know the impacts, and they haven't heard it from at least a scientific level of, if you do this, you're going to get this, and, by golly, we got all of the uglies going on up and down the coast.

That, to me, is -- Most of those are still estuary environments and habitats that are just eutrophic, and, when they're eutrophic, nothing is going to grow, and the fish aren't going to be there, and it just is a cycle that I don't see a stop to until we hit the folks that make the policies, but, first, they have to understand what the issues are, and they don't.

MR. PUGLIESE: Thanks, Sam. I think what you have absolutely crystalized is the value of some of the additional effort that's going to be coming shortly with our outreach and communications. The better that this information can be relayed, the mandates and policies, et cetera, all the way down to the local levels and information accessibility, it's going to enhance the overall understanding and hopefully use and better application of this into multiple levels of government, local, state, and federal, and so thanks. I think Cindy is next.

MS. COOKSEY: Hi, all. This is just quickly to go back to an earlier comment, and I wanted to jump to the defense of my state regulatory colleagues and myself and just highlight that pretty much all of us come from a research background and spent decades in the mud and on the water

conducting research at multiple spatial scales within their particular states or around the country, and so I think it's critical that we have our at-large researcher positions on the committee, but I just wanted to not underestimate the research background that our regulatory members also bring to the table. Thanks.

MR. PUGLIESE: Thanks, Cindy. Kevin.

MR. SPANIK: Hi, everyone. I just wanted to sort of echo David's comments from earlier about having someone that is active with the research surveys in the area, and I think that's maybe just me for right now, but I think that's really important, because that person kind of has a good idea of what tools and units are actually available right now, and they may be able to kind of answer some of the questions that are coming up here in a more timely manner.

I talked with Marcel Reichert earlier, before joining, and something that he had mentioned to me that he thought could be useful, and that's been helpful to the AP is the past, is sort of just like an overview of some of the active programs in the region, and I would be happy to be the person to kind of provide something like that in future meetings, if that's something that people think would be desirable. Thanks.

MR. PUGLIESE: Thanks, Kevin, and I think that's the whole purpose of everything we've got going on right now, is the ability to refine this and to elaborate on the functions that may not have been identified. I, over a number of years, have been working really closely with Marcel, and he has provided a lot of those types of updates on overall review of fishery-independent surveys over time and everything, and that's been just kind of a nice close coordination with both the surveys and SSC rep, et cetera.

I think that's important, to make sure we highlight that and have the opportunity to make sure that that's continually moving on, because that's been an important point, to understand what is going on and how those can contribute to information we have that is foundational for the essential habitat and for mapping and for characterization and for future modeling, et cetera, and so that's great, and I think we need to make sure that that is captured within here, because that's been a pretty important part of this AP over time, and, to some degree, has been another informal kind of coordination that we have done. Back to Wilson.

DR. LANEY: Thank you, Roger. I just wanted to say that I thought Sam's idea about trying to come up with an equivalent to MREP for local government representatives is an excellent one. We have had many, many a conversation on the Atlantic States Marine Fisheries Commission Habitat Committee, and Dr. Havel may want to weigh-in here, about the fact that, as far as maintaining water quality and habitat quality, that those local officials who have the regulatory responsibility in their local jurisdictions are where the rubber meets the road.

We had attempted, in the past, several effort at outreach, which were possibly somewhat successful, and we really don't know, because, so many years ago, we didn't have the tools that we have today to assess people's knowledge and engagement, all these electronic things that we can do. We had created a habitat managers' database, for example, that we tried to keep current and updated all the way down to the local level, by including town and county planners on it, and it provided extremely large and unwieldy and, because of job turnover, very difficult to keep it

updated and current, and so we have sort of fallen back on our state representatives and to depend on them to convey information to the local folks.

I think Sam's idea is a great one, and maybe that's something that could be passed along to the Information and Education Advisory Panel as a suggestion for a task for them to work on, and then that also leads me to think that that is another important advisory panel, and I know that Kevin asked if there any sort of -- Or Sam. One of the previous speakers asked if there was any sort of a formal feedback loop, i.e., if the Snapper Grouper AP comes up with a habitat issue involving sargassum, for example, is there a formal way that they pass that along to us, and I guess the answer to that would be that the responsible council staff really serve as the integrative matrix, if you will, or maybe the catalyst, to ensure that conversations between advisory panels occur.

That is a good thing, as long as council staff are willing to accept that responsibility and make sure those integrating conversations are occurring, and I think, at least based on my experience, council staff does that pretty effectively. If an issue arises in the Snapper Grouper AP that involves habitat, usually it comes to the Habitat and Ecosystem Advisory Panel.

I will just say, in closing, that it's a daunting task to effectively operate any fishery management council and make sure all the moving parts are effectively meshing together with each other so that the result, the outcome, is that the council is meeting its Magnuson-Stevens mandates, and I think the South Atlantic Council has historically done a very good job of that, and I look forward to seeing it continuing to do a good job of that, and I am so glad that we have the opportunity, as an advisory panel, for providing input on this job description draft and the opportunity to comment on it.

I think it would be good for all of us to be able to, after we have this discussion, still to go back and read over it and see if we have any additional thoughts and be able to provide those to Cindy and Roger and Myra. Thank you.

MR. PUGLIESE: Thank you, Wilson, and, to that point, we have had direct coordination with an upcoming Outreach and Communications meeting, to provide guidance on how they would address that, and we anticipate more direct coordination, and I think Myra is next, and she will probably touch on that as well.

MS. BROUWER: Thank you, Roger, and thank you, Wilson, for bringing that up. I had meant to address that comment that was made earlier. We do, as staff, try to keep up with what updates need to be brought to the various advisory panels. The council also has directly requested, for example, that advisory panels be kept up-to-date on activities, for example, pertaining to climate change, which is going to be you guys' next topic here this morning, and so they have asked us to make sure that updates on what's going on there get included on advisory panel agendas.

Then the other thing we do is we provide a draft of topics that we, in coordination with the various AP chairs, come up with for the council committees to approve before the agendas are developed for the advisory panels, and we're doing that more often these days, to make sure that council is more engaged in the questions and the issues that they want advice on from their advisory panels, and so there's a lot of communication and coordination both ways in that respect, and so I just wanted to make sure that you guys were aware of that. Thank you.

MR. PUGLIESE: Thank you, Myra. Lisa.

DR. HAVEL: Thanks. Wilson actually brought up a lot of things that were before my time, but I know that the ASMFC Habitat Committee, as well as the Atlantic Coastal Fish Habitat Partnership, have always held water quality issues high at the top of their list of threats and things we need to work on, but, without the regulatory authority, we've always struggled on what we can actually do about it, and, in the upcoming year, the Atlantic Coastal Fish Habitat Partnership will be updating its five-year conservation strategic plan, and, Wilson, this might be a good opportunity to write into the plan holding workshops and coordinating with the councils along the Atlantic, and maybe the ASMFC, to reach out to the people who do have the ability to make an impact and provide the training that I know Sam and Wilson have talked about, and so that might be a good nexus for that.

MR. PUGLIESE: Thank you, Lisa, and I think you actually bring up something that's important to consider as we move through these different types of things, is that, if there are areas that become large enough that they should be addressed as a policy, that may be something that could advance as a new policy, and I know we've had this discussion before, because we've touched on it and then kind of backed away, because it's in different aspects, and so that may be something that helps frame and advance that discussion and coordination with ASMFC and with other partners and with the states and going all the way down to the local level. Sam and then Myra.

MR. YOUNG: Just to circle back on the outreach, what I get here that kind of grabbed my attention was that, you know, some of the outreach was focused on like city planners, and city planners are only the minions of the city council, and the same at the county level, and so, if you're going to outreach, to me, I would -- If I could wave a magic wand, it would be a mandatory three days of education, and hit the high points on what they can do, and there's a ton of them, from stormwater, which was probably the biggest polluter of Marco Island.

Even though everyone went to septic, what they didn't know is, at the same time, concurrent with that migration from septic to a mainline, is the public works department was on the other end, under the radar, building labyrinths of inlets and outlets and expanding on the outlets, so that all the stormwater, streets and from the various homes that are along the waterway and the weep holes coming down through the seawalls and going into our waterways, that those are the things that are set by policy and legislated by the city council.

The city management caters to the city council, plain and simple, and I think it would also serve the counties as well, that not only have to deal with the saltwater component, but also the freshwater component, because inland Collier has got lots of lakes and rivers and whatnot, and they all go into, guess what, our saltwater estuaries that they feed into, and so I just think it's a huge opportunity, and, without some enforcement, and the necessary training gets provided to those that are doing the legislating.

Again, it goes back to I'm worried about what they don't know about what they don't know, and most of them don't know anything about the sea or the fertilizer ordinances or what have you, and they're not enforced, and they're not paid attention to, and, before you know it, you're in eutrophic waterbodies that could take years to -- Especially when you've got phosphorous involved that only can -- In a hurricane, it gets stirred up, and it causes problems, but the only way to remove phosphorous is to dredge it, and that can be cost prohibitive.

MS. COOKSEY: As Chair, I was hoping that we could kind of start to wrap up the discussion on this.

MR. YOUNG: I just want to throw that out there and say can we look at this as part of our purview, as to making a recommendation that maybe it's a pilot just for south Florida and the council, but to throw something out there and get to the key movers and shakers that legislate and have the power to legislate, but don't have the education to legislate in a responsive way that can improve or mitigate, significantly, various ways and means of polluting our waterways, especially with fertilizers and the enforcement of their existing fertilizer policies and so forth, and so, I mean, I have seen it, and it's so run amuck that -- I have stories that you just couldn't make up.

MS. COOKSEY: Okay. Well, thank you, Sam, so much, and I appreciate all of the great discussion that we've had this morning on this topic, and I encourage everyone to submit written comments to Roger and I regarding the recommendations, so that we can make sure that those are moved forward, and, Roger, did we hit everything that you were hoping to hit for this discussion, or were there still items that you needed to go over?

MR. PUGLIESE: I didn't need to go over any other things. As I mentioned, if there are any -- I kind of gave you the overall structure of what is moving forward in the habitat blueprint. If there are any areas that, once you look back, that just kind of the general information that you feel are not included -- I think the discussion on the panel itself added other things that I think could be potentially addressed in the blueprint itself, just to highlight it, but, if there are other things that are significant areas that may not have been included, make sure that you do provide that recommendation back directly to us and forward any comments you may have on the structure or other areas that may be worth highlighting in that kind of higher-level blueprint document, because that's going to be the thing that will be out in the public and available, but a lot of this discussion goes far beyond just the description of the AP, and I think we provided some additional input on that already, and so, no, I do not have anything beyond that at this stage.

MS. COOKSEY: Okay. Great. Thank you so much, Roger. I did want to give folks a quick seven-minute break, before we get into our last topic of the meeting, and so we're going to go on break now and return at 11:00. Thank you so much.

(Whereupon, a recess was taken.)

MS. COOKSEY: Welcome back, everyone. It's 11:05, and we are now going to begin our last session of the morning, the last session of the meeting, led by Roger, to discuss the East Coast Climate Change Scenario Planning, and so please go ahead, Roger.

MR. PUGLIESE: Thank you. Okay. I did want to move into the last item of the day, which is an overview of what is moving forward on the Atlantic coast, the East Coast Climate Change and Scenario Planning initiative. What I will do is would like to highlight that, originally, the council had been in discussions with, and had meetings that specifically coordinated with, the New England and Mid-Atlantic Councils a while back. In those discussions, they talked about attacking the issues of shifting species and potential governance, et cetera, twofold, one in a science approach and the second in beginning to discuss governance and what some of the implications are.

To some degree, as a follow-up on that, the Northeast Regional Coordinating Committee, in the Northeast, advanced and had identified a potential process to initiate that type of effort, and it has now evolved in the East Coast Scenario Planning Initiative, and it's a way to really explore jurisdictional governance issues related to climate change and potentially shifting stocks.

Some of the first initial discussions from the group occurred back in November of 2020, and then in July of 2021, the NRCC, is the acronym, another acronym to throw on the table, in coordination with the South Atlantic Council, as a partner in this, initiated this process. It's a six-phase process that involves an orientation, scoping, exploration, scenario creation and synthesis, applications, and monitoring.

The intent of this is to prepare fishing communities and fisheries management in an era of climate change. Again, some of the shifting stock issues have been critical in the Mid-Atlantic and New England, with species moving totally out of jurisdictions of some areas, and so it became a pretty critical issue to begin addressing.

What we have is a process that is coordinated between the partners in the entire Atlantic coast, and so you have the attempt to look at, within the coming decades, really what some of the challenges are going to be address shifting stocks and changing distributions and abundance and how that's going to really affect what we do in fisheries management and how we coordinate between the different partners, and so what scenario planning is, it's really an attempt to try to help stakeholders and fisheries managers prepare for this change and begin to look at what some conditions may be and then really what are different variations of how you address this.

It is essentially a process to identify stories, or processes, of what it may look like, and the timeframe that's been selected is how we could potentially look at -- We're not really trying to predict the future, but look at potential things that could occur and factors that would affect that and shape the entire east coast fishing efforts by 2040, and so this process is a multistep process, as I mentioned.

There was an orientation to understand where we are and what's going on, and, if you look at this one area, the management actions throughout the entire range are affected by a number of different drivers and activities, from the environmental or biological ones to ones that are everything from market to access to competing resources, or competing efforts, like offshore energy, and, in other regions, aquaculture. To the Northeast, there is already some aquaculture location areas that they're identifying, and so, through these efforts, what you are trying to do is to build the knowledge and the understanding of what may be going on in the region already, what's being identified, and then determine some drivers, and then, ultimately, come up with a workshop process that identifies scenarios.

The project focus is twofold. One is to assess how climate change might affect stock distribution and availability and other aspects on the Atlantic east coast marine fisheries over the next twenty years and then to identify what this means for effective governance and fisheries management.

Some of the expected outcomes, ultimately, would be a set of scenarios that are essentially stories, to understand and describe, in qualitative terms, the different ways in which changing climate may affect the future of fisheries on the east coast and also better understanding of the challenges and opportunities facing fisheries management into future, a set of near-term and long-term

management priorities that help achieve fisheries management objectives under a range of different future conditions.

Then policy recommendations for broader governance changes that may improve the ability to adapt to future scenarios and a list of data gaps and research priorities and monitoring and needs for the changing conditions. Then a framework to really kind of go beyond here of ongoing conversation to have idea generation and integration and coordination with all stakeholders.

It's not -- As I mentioned, this is not designed to create quantitative predictions about changing climate. It's instead really a strategic tool for us to consider different conditions and adaptation options, similar to the way you lead to implement future regulatory changes. Any real policy recommendations or management actions, et cetera, are going to be done in the individual areas, and so who all is involved in this process?

The intent is to have everybody from researchers to fishermen and fisheries managers and coastal representatives, shoreside as well as anybody involved in ocean activities, and so this gets back to what I first discussed, is the process, and it's a process that includes an orientation, which is establishing draft objectives and the expected outcomes and the project focus, and that's one of the first steps that we are going through.

We are in the scoping phase, to reach out to stakeholders and gather input on the forces of change that could affect fisheries over the next twenty years, and then that transition from scoping to exploration is really where we're at right now, and that is to look at, in the exploration phase, to analyze forces, driving forces, and dig into that a little further, and so what has happened so far is that we have had kick-off webinars, and so this is where we literally are right now with this process.

We have had kick-off webinars to start the process, in August and September of this year, which engaged basically that entire array of individuals mentioned previously, and it was followed by a questionnaire that highlighted different aspects that would provide guidance on how we advance into the future.

The scoping phase really, as I mentioned, had three components and three main activities. We created the materials and have a website connection, which is identified in the brochure here, and we created the brochure itself to be able to do it. When you go to that link, there are a number of different videos that were used to kind of lay out what scenario planning is and then some connections to the overall process.

In addition, the webinars were designed, the ninety-minute webinars, and the conversations from those different breakout groups are being compiled now, and some of that information is being advanced on helping guide where we go. We had about 383 responses to the questionnaires, to-date, and those are being compiled to give guidance on how we advance with some of the -- One of the biggest things is are you seeing changes in the areas, and some of that is highlighted very effectively.

The detailed information is going to be presented to the upcoming NRCC meeting, and the information then will take the next step of trying to refine that information as we move further into this process. In the early part of next year, I think there will be maybe some online webinars that will highlight things such as some information we may have to connect and better understand some

of the drivers, such as the information that is shown for changing temperatures and areas in our region, some information on shifting stocks, et cetera, and so some of those will be kind of precursors to the workshop that I had mentioned that will happen -- We're anticipating a couple of months after that, potentially into next year, and those workshops will really get into the idea of what are the drivers in the area and then how do you begin to look at various implications and scenarios for the region.

One of the two other outcomes from this scoping process was input on the various objectives that I had mentioned earlier on, looking at the development of tools or the drivers and how input is going to be on the governance, and that is also going to be highlighted in additional input from the NRCC.

Some of the very basic outputs from the scoping phase so far is a lot of interest in the subject and a realization that climate change is real and moving forward, and stakeholders are already seeing effects, and there are multiple examples coast-wide, of everything from various species shifting to occurrences of new fisheries or disappearance of fisheries or changing habitats within the system. The objectives that were presented, there seemed to be fairly good support for the general project objectives, and about 90 percent of the individuals involved in the questionnaire still want to be engaged in further evolution of this process.

I think one of the biggest things is to make sure that the process is broad enough and includes enough stakeholders and enough users and enough -- Kind of the real broad scope and that you really understand all the implications that this may have. The idea is that the next steps are going to be creation of a publication of the full scoping summary information.

The exploration phase really is going to be identifying those forces, and so this is where things such as the ecosystem status report that came out is really important for us, because some of those drivers, I think, will be actually highlighted within that, and many of the other regions already had that in the Northeast, and so they were kind of a step ahead on some of that, and so I think the timeliness of getting that on the table was really critical, and the idea is that -- I mentioned before those January education focus webinars are going to be really important to provide some foundation about what some of those kind of leads into the drivers, what the implications are or what the foundation of the science for some of that is.

The scenario creation and synthesis phase is the steps afterwards, and that's going to be something that really advances into planning and then really looking at how we end up with some workshops to advance that, in probably March or later of next year, and so this process is an ongoing, evolving process, but critical at this stage, in terms of really getting off the ground, and I know a number of members were probably directly involved in either the webinars directly or provided input on the questionnaires.

I wanted to at least get everybody up-to-speed on where we are, the overall process that has been undertaken, and, if some of it seems as if it's still evolving, it is, and so I think that's the key, is that we're learning as we go, in terms of how this is going to provide an effective way of beginning to address this issue and make sure that all the partners on the east coast, from the New England Council, the Mid-Atlantic Council, the South Atlantic Council, the Atlantic States Marine Fisheries Commission, the Northeast Science Center, the Southeast Science Center, and the GARFO, the Greater Atlantic Region, and the South Atlantic Region begin to get prepared for

these types of activities and potential shifting stocks or how to address that in our region. With that, I will just open up to the members and start from there, because there is a lot more to come, and I anticipate the advisory panel will be engaged as we go further, too.

MS. COOKSEY: Thank you, Roger. It looks like we've got Paula up first.

MS. KEENER: Thank you, Roger, for that presentation. I know that this was mentioned briefly yesterday, on Wednesday, but could you speak a little bit more about the CVA, how the South Atlantic CVA is going to intersect with this all-Atlantic, or east coast, climate change scenario planning process, please?

MR. PUGLIESE: Well, I think some of that is evolving right now, because I think what the idea is -- You're really looking at the drivers, and I think that's one of the more -- I think some of the ecosystem status report outputs on climate drivers are really going to affect what that is, and the CVA may provide what species may be vulnerable, and, as I mentioned, this is really kind of an investigation to look at scenarios of what may change over time and what the implications are, and so there isn't necessarily a direct connection to the detailed outputs from the CVA, and that's still not done yet, and so I think we'll see, when that gets completed, on how much -- I think these tend to converge as you go further down the road, because you may be looking at scenarios, and that may have implications for those species that have been highlighted as vulnerable, and then the council has the opportunity to consider those, kind of the stages after you go through this type of process.

Then it provides some foundational direction on these types of areas may need to be addressed, and so I think that's, to some degree, still evolving, and that's going to also be somewhat of the connection with the Southeast Center and the Northeast Center, on how those information from the respective, whether it be the ecosystem status reports or the climate vulnerability, are able to frame what the drivers are and what some of the vulnerable species may be.

MS. KEENER: All right. Thank you for that. I think the species designations of low, moderate, or high risk would result in various scenarios specific to this region, and so thank you.

MS. COOKSEY: Thank you. We've got Wilson up next.

DR. LANEY: Thank you. I was just going to respond to Paula and say I'm on the CVA team, and it isn't finished yet, but it's hopefully going to be coming out in the not-too-distant future, and Roger already said basically what it does. It's going to define species vulnerability, and it's very interesting to look at.

One thing that I think is fundamental question for everyone to consider is whether or not the productivity of habitats affected by climate change, and species affected by climate change, which, obviously, shift their distribution to presumably try and keep themselves in more optimal habitat conditions, and the fundamental question is what's that going to do to productivity, and that, of course, speaks directly to where fisheries occur and how much of them you can harvest and so forth and so on, and so I hope, at some point along the line, somebody is posing that question, and, at some point, maybe there can be some sort of a modeling exercise to see whether or not production is going to be affected or whether, as some species move north and some species move offshore and other species that may be more adapted to warmer conditions will move in there, and

productivity will remain relatively unchanged, and it will just be present in a different suite of species than it was before.

MR. PUGLIESE: Thank you, Wilson. I think just, before we move on, some of the outcome of the scoping, I think there was -- When we had the different aspects that it laid out, there was concern coming through the webinars, and even from the outputs on emphasizing more of the habitat changes that may be affected, and it touched on productivity. However, I will state that some of those broader efforts, in terms of translating what might be the threats and what might be the conditions, would be things that happen after this process, because those -- It kind of sets the stage for that.

You have identified what some of the implications and what some of the concerns may be, and then how do you translate that to information, or capability, that the council and the SSC and others can use, and those will be processes that will come after this first step, to begin to understand the bigger picture. David.

DR. LANEY: If I could have a quick follow-up, Roger, and so has there been discussion of the fact that -- It seems to me that the South Atlantic Ecopath model could possibly play a role in at least providing some insight into those production changes, and I don't know. I haven't thrown that one at the model team yet, but it seems to me that it could be useful in that regard, and has there been any sort of discussion about its utility?

MR. PUGLIESE: Well, not in the forum that this is, and this is really looking at essentially a higher level, and I think, yes, those discussions have happened, and I know that's the idea, is that that may provide a mechanism to really look at some of those types of implications, but I think, as I mentioned, I think identifying the concern over those is different than it actually proceeding, and that's going to be kind of the translation of what some of the concerns may be to either the science that supports this or the --

This is focused a lot on the concern that translates to governance and the actual science that's going to support things such as productivity change, and actual shifts in the distributions, et cetera, are going to be the follow-ups beyond here, and Ecopath, I would think, would be one that you could begin to -- I know, in the past, in discussing it with other individuals involved in the modeling efforts, those would be anticipated as potentially some avenues that you could maybe see those kinds of shifts. David.

MR. GLENN: Good morning, Roger. I just think this is a really interesting effort, and I wasn't able to make any of the three dates that were there, the late August and early September, and are you guys planning on doing any more additional webinars?

MR. PUGLIESE: Not on the scoping side. The scoping phase essentially is -- We have moved through that to the next stage now, and what's going to happen next are going to be the additional webinars to focus in on some of the potential drivers, or environmental variables, that might be considered in -- That are going to go into the next stage, but there's also going to be a workshop process that follows this.

MR. GLENN: Okay.

MR. PUGLIESE: I say that, but we'll see. This still goes up to the NRCC, and there may be additional discussion on are there other things needed, and so the process still is early in there, and I think this set the stage for some of the more significant efforts that are going to happen, including the workshops that really are going to get into the meat on some of these types of things.

MR. GLENN: Okay, and so I think you've already said this, but you've already gotten some feedback from stakeholders, correct?

MR. PUGLIESE: Yes.

MR. GLENN: Okay. Just, when I poked around the website, I couldn't see a link to -- I know a couple of folks on the Outer Banks that would be -- Go ahead.

MR. PUGLIESE: I was just saying that it is not out yet, and that's what I was -- This is actually being compiled literally right now, and we're reviewing some of the information that's going to go up to NRCC, because that's kind of the funnel, that this goes up, and it's going to be compiled, and I think one of the products after that is actually going to be a kind of more formal compilation of that, into a document that's going to be available. I know, and there's a lot of people that are like, hey, this went forward, and where are we now, and that --

MR. GLENN: I guess, when I looked at the webpage, I thought it implied that you had to be on one of those initial webinars to then get the link to provide stakeholder feedback, and so I understand now. That was kind of where I was trying to figure out what was up.

MR. PUGLIESE: More to come.

MR. GLENN: Thank you.

MR. PUGLIESE: It's the beginning of those process, really. Thank you.

MR. GLENN: Gotcha. Thanks.

MS. COOKSEY: Thank you, Roger, for that. I am not seeing any more hands up, and I just want to give it a second, just in case anyone else wants to jump in on this topic. It looks like we're close to wrapping-up the meeting. I did want to, again, mention that, if panel members have additional recommendations for the habitat blueprint that were not captured in today's discussion, please go ahead and send those, in writing, to Roger and I, so we can make sure that they are brought up to the council's view.

I also wanted to thank Rene for already putting me in contact with Roxanne, so that we can add her to the sub-committee for the beach nourishment policy revision and to expect the committee members that we will have some additional follow-up, after this meeting, to continue to work on incorporating the comments that we heard yesterday, so that we can continue that process of the policy development. I wanted to take a minute and open it up to the panel members, to see if there was any other business that we needed to bring forward at this time.

MR. PUGLIESE: Cindy, one thing I will do is I will go ahead and send the report from the June council meeting, and it has the goals and objectives, and so, if anybody wants to provide -- I know

Paula had noted that we -- It got laid out for you, but I will provide that directly to you, and then, if you have any comments on those goals, the descriptions that Myra had read out, that are going to be the drafts that are being circulated within the blueprint, then that will be something else that you can provide some input back to us.

MS. COOKSEY: Great. Thank you, Roger. I see Wilson has a comment.

DR. LANEY: Thank you, Madam Chair. You had mentioned about other business, and it's not -- This is sort of other business, but sort of not, and so Lisa may want to weigh-in here and brief the AP on the discussion that took place at the ASMFC meeting last week with respect to offshore wind. Commissioner Joe Cimino raised the question to the commission's executive committee, and then there was further discussion, a little bit of further discussion, at the ISFMP Policy Board, about the role of ASMFC in offshore wind.

During the executive committee discussion, nobody mentioned that the ASMFC Habitat Committee has been involved in that discussion since the beginning, and we actually published a habitat management series document, and I think it was Number 7, on offshore wind back in 2012, and I wanted to commend Roger and the council for keeping this Habitat AP very well informed, and I know that Rick Robbins has been to talk to us, and we are so privileged to have Brian Hooker as a member of the AP.

We have stayed very well informed about what's going on with offshore wind, and sort of the crux of the ASMFC discussion was do they, as a commission, need to be more engaged and do they need to perhaps even have a staff person who would be assigned to address offshore wind, and so they didn't make a decision on that, but Lisa may have more knowledge about any sort of conversations that took place after the meeting, and so I will defer to her on that point, but I thought it was interesting that there is interest at the ASMFC level, especially since, you know, more and more offshore wind, we know, is going to be coming, and so I think it's on our radar screen already, as this advisory panel, and hopefully it will continue to stay on the radar screen.

I did refer the commissioners to Rick Robbins, because Rick is serving as the liaison, as most of you know, for Avangrid, which is doing the Kitty Hawk wind project, and so I just wanted to throw that out there and let everybody know that was going on, and Lisa may want to add to that, and I see she has signed-up to do so. Thank you, Lisa.

MS. COOKSEY: Thank you, Wilson. Lisa.

DR. HAVEL: Thanks, Wilson. There hasn't been much follow-up since the meeting, mostly because Toni has been on vacation the past week, but I did touch base with her, and, for those who don't know Toni Kerns, she is the Policy Director at ASMFC, and it is on her list of things to do, to talk with Bob Beal, our Executive Director, about ASMFC's role in offshore wind, and she will be providing an update on that conversation to the ASMFC Habitat Committee at our meeting on December 2, and so there hasn't been much more discussion following the commission meeting, but hopefully we'll have an update in the upcoming weeks.

MS. COOKSEY: Thank you, Lisa. We see Brian is up next.

MR. HOOKER: I was really taking over the AP a little bit here, but, Wilson, thank you for bringing that up, and I had actually kind of forgotten about that exchange, and, Lisa, I think, from my perspective, it's really always been dependent upon the chair of -- Whoever is chairing the commission and their interest. I think, in the past, they have requested more involvement, and we gladly were a part of it, and it was during that time that we penned that -- Or not we, and I wasn't directly involved, but the "Offshore Wind in My Backyard" document was done, and I think, Lisa, that was around the time that you were doing some of the -- You began that acoustics paper, which I don't know if I want to know about --

DR. HAVEL: It's moving. It's moving slowly.

MR. HOOKER: Okay. So all of that is ongoing, and maybe it's just an education type of thing with the commission folks, that we're happy to keep them as up-to-date as they want to be, but it's usually like a bandwidth type of issue, and I'm happy to do what we can there.

DR. HAVEL: Madam Chair, if I may just add one more thing, and I think part of the issue with the commission is, with each state, they have very different perspectives on offshore wind, and so I think the concern, for the commission, is how do we come together with one viewpoint, if we were to have say a policy or write a letter or anything like that, and so the role might be more just informational, but all of that is going to be discussed, I think, in the upcoming weeks.

MR. HOOKER: Yes, and that's my recollection as well, because they can't -- There may be state representatives that can't have a -- They are wearing multiple hats, right, and they're representing the state and not just perhaps the thoughts of a fisheries management perspective, and it creates issues, I suppose.

MR. PUGLIESE: I put my name down, but I'm going to jump in. I think -- I really appreciate all the discussion on this, and I think the issue of offshore wind has become so significant at this point, and it's been really good to have such close coordination with Brian, and with Rick and others, to advance the efforts, and hopefully that's actually going to translate into some of the newer areas that we just discussed, and some of the implications -- The reality check here is, to the Northeast, some of the implications for the big trawl fisheries, the research trawls that are occurring, and they don't occur in the Southeast, and there is a very different perspective in our region, working with our individual states, on opportunities for new fishing areas that these may create in some of the offshore areas, as well as new platforms for -- We have talked about these a number of times, new platforms for ocean observing or fisheries information gathering capabilities.

I think that doesn't surprise me, that there is that much issue on ASMFC's side, because there is some very different dynamics, I think, going on at the state levels relative to what the implications are for the individuals at that state level, and so, in the Southeast, hopefully we can advance further and keep moving and keep on the good track that we've had with, so far, with the beginnings from Kitty Hawk and then into other activities, and I appreciate, again, all the work from Brian and other partners to make this coordination and collaboration and discussion continue.

MS. COOKSEY: Thank you all for that. I wanted to recognize Wilson.

DR. LANEY: Thank you again, Madam Chair, and Roger's comment just reminded me that, yes, the commercial trawling and trawl pathways is more of an issue in the Northeast, perhaps, but one

issue that touches us as well is the fact that, once an offshore wind facility is located, it may have an impact on fishery-independent surveys, and so that was one thing I think that has been discussed, and I don't know that our Southeast fishery-independent survey folks -- They probably have, maybe, but I don't know that they have weighed-in a whole lot on whether or not the Wilmington-East wind area would in any way affect their ability to continue randomly sampling off the South Atlantic coast, and so that is something that maybe we'll hear about in a future briefing from Marcel or somebody else who is involved in those fishery-independent surveys, maybe SEAMAP in general, and so that's something we need to think about, too. It's not just fishing activity, but it's also survey activity for our fishery-independent surveys that could be affected as offshore wind facilities are located.

MR. PUGLIESE: I appreciate that, Wilson, and, truthfully, in the Northeast, that was one of the first things that did happen. There was a coordination and identification that it was not having basically any interaction with regard to the Kitty Hawk wind. With regard to the next phase, it's literally just coming down the pike now, and I am sure that -- Hopefully it's going to -- That's why I was saying that following the same pathways that some of the work to the north has happened, is to see how this overlaps with MARMAP and SEAMAP and any other efforts is going to be important.

I think it's on the radar already, because it happened earlier, and so my anticipation is it's going to also be integrated and highlighted and made sure that it's not going to significantly affect those systems, and so there's a track record already with the Kitty Hawk, and so hopefully that gets translated down to the next discussion.

MS. COOKSEY: Thank you all, and I do want to mention that the Southeast Fisheries Science Center has already been engaged in discussions, and we have brought those surveys forward as a point of interest, and so that is definitely something that is being addressed in the South Atlantic region. Just one last chance, to see if we have any hands going up for other business, before we close out that section. Okay.

I do also now want to open it up for public comments, as we close out the meeting, and so, if we have any additional public comments, this is an opportunity now to raise your hand. Okay. So we have no hands going up, and so, at this time, I believe we can adjourn the meeting, and I want to thank everyone again for all of their hard work in pulling this together, and thank you all for your participation, and I look forward to engaging with you guys over the next few months, ahead of our spring meeting. Thank you all.

MR. PUGLIESE: Thanks, everyone, and I did, as a final note, forward the goals and objectives document, as well as links to the online climate, and it's both in the chat as well as directly, and the website has a lot more information on the climate scenario planning.

(Whereupon, the meeting adjourned on November 4, 2021.)

- - -

Certified By: _____ Date: _____

Transcribed By
Amanda Thomas
December 28, 2021

Attendee Report: Habitat Protection & Ecosystem-Based Management Advisory Panel Meeting

Report Generated:

12/21/2021 06:54 PM EST

Webinar ID	Actual Start Date/Time
291-840-907	11/03/2021 08:34 AM EDT

Attendee Details

Attended	Last Name
Yes	BROUWER
Yes	Baumstark
Yes	Belcher
Yes	Bianchi
Yes	Cherubin
Yes	Clarke
Yes	Collier
Yes	Cooksey
Yes	Crowe
Yes	Curtis
Yes	Deaton
Yes	Finch
Yes	Glenn
Yes	H
Yes	Hartfield
Yes	Hartzler
Yes	Havel
Yes	Hawes
Yes	Helies
Yes	Higgins
Yes	Hooker
Yes	Howson
Yes	Iberle
Yes	Jensen
Yes	Jones
Yes	Keener
Yes	Laney
Yes	Medders
Yes	Murphey
Yes	Patten
Yes	Paxton
Yes	Reeves

Yes	Ross
Yes	Runde
Yes	Schmidtke
Yes	Soss
Yes	Spanik
Yes	Staples
Yes	Thompson
Yes	Udouj
Yes	Whitaker
Yes	Wiegand
Yes	Wilber
Yes	Young
Yes	harding
Yes	miller
Yes	taylor
Yes	thomas

Duration
7 hours 22 minutes

First Name
MYRA
René
Carolyn
Akan
Laurent
Lora
Chip
Cindy
Stacie
Judd
Anne
Margaret
David
Leigh
Ross
Jeff
Lisa
Rachel
Frank
Jaclyn
Brian
Ursula
01Allie
Brandon
Tom D
Paula
Wilson
Paul

Trish
Willow
Avery
Casey

Steve
Brendan
01Michael
Jeff
Kevin
Shane
00Laurilee
Tina
David
01Christina
Pace
Sam
kimberlee
steve
chris
01suz

Attendee Report: Habitat Protection & Ecosystem-Based Management Advisory Panel Meeting

Report Generated:

12/21/2021 06:55 PM EST

Webinar ID	Actual Start Date/Time
291-840-907	11/04/2021 08:24 AM EDT

Attendee Details

Attended	Last Name
Yes	BROUWER
Yes	Baumstark
Yes	Belcher
Yes	Bianchi
Yes	Busch
Yes	Chaya
Yes	Cherubin
Yes	Collier
Yes	Cooksey
Yes	Crowe
Yes	Curtis
Yes	Deaton
Yes	Finch
Yes	Glenn
Yes	Hartzler
Yes	Havel
Yes	Higgins
Yes	Hooker
Yes	Iberle
Yes	Jones
Yes	Keener
Yes	Laney
Yes	Medders
Yes	Murphey
Yes	Patten
Yes	Ross
Yes	Schmidtke
Yes	Spanik
Yes	Staples
Yes	Udouj
Yes	WEBB
Yes	Whitaker
Yes	Young

Yes	harding
Yes	miller

Duration
3 hours 21 minutes

First Name
MYRA
René
Carolyn
Akan
Laura
01Cindy
Laurent
Chip
Cindy
Stacie
Judd
Anne
Margaret
David
Jeff
Lisa
Jaclyn
Brian
01Allie
Tom D
Paula
Wilson
Paul
Trish
Willow
Steve
01Michael
Kevin
Shane
Tina
DAVID
David
Sam

kimberlee
steve